TEXT LITE AND DARK
WITHIN THE
BOOK ONLY

TEXT PROBLEM
WITHIN THE
BOOK ONLY

THIS BOOK IS A
COLOUR PAGES
BOOK

ANNAMALAI UNIVERSITY

Question Papers

MARCH, 1938.

B. A. and B. Sc. Degree Examination.

UNIVERSAL
LIBRARY

OU_172554

UNIVERSAL
LIBRARY

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

GENERAL PSYCHOLOGY

MONDAY, 21ST MARCH] [10 A.M. TO 1 P.M.

Max marks 200

[*Attempt* FIVE *questions*]

I What are the fundamental characteristics of Behaviour? Critically estimate Watson's analysis of Human Behaviour

II What is the role of imagery in thinking?

III Give a psychological analysis of our perception of space

IV What is Emotion? Critically estimate the Hormic or the Behavioristic account of Emotion.

V What are the processes involved in memory? Discuss the adequacy of Kohler's explanation

VI 'All learning is insightful' 'All learning is conditioning.' Discuss

VII 'Character is the system of directed conative tendencies.' Discuss.

VIII Critically examine the efforts of Woodworth to evolve an Eclectic Psychology.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

THEORY OF KNOWLEDGE

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

[*Attempt* FIVE *questions*]

Max. marks · 200

I. Discuss the value of doubt as a fundamental method of inquiry in epistemological investigation.

II. If the whole judgment is a single content what is the difference between the subject and the predicate? Is it at all necessary to distinguish between the subject and the predicate?

III. 'Bare denial amounts in the strict sense to nothing' Explain What is the function of negation in knowledge?

IV. 'The common charge against idealism is that it lacks a genuinely scientific method of procedure.' Discuss.

V 'Inference cannot possibly take place except through the medium of an identity of universal which acts as a bridge from one case to another' Explain.

VI. 'Pragmatism explains not what truth is, but only how it is acquired. Indeed, it is not intended to define truth at all.' Examine.

VII Discuss the value of non-contradiction as a criterion of truth.

VIII. 'Critical realism arose, as a protest against the older representative realism.' Explain.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

HISTORY OF INDIAN PHILOSOPHY

THURSDAY, 24TH MARCH] [10 A. M. TO 1 P. M.

[*Answer* FIVE *questions*].

Max. marks: 200

I. "The dualism between jīva and ajīva in Jaina thought leads logically to monism" Examine this view.

II "There may be no metaphysical *aim* in Buddhistic teaching, but there is a metaphysical *view* underlying it" Explain

III. Examine the Nyāya theory that jñāna or knowledge is not an essential attribute of the self.

IV. Consider the arguments advanced by the Sāṅkhya to prove the plurality of purusas.

V. "The Mīmāṁsā doctrine of the veda is dogmatic and scholastic and not based on reason."

Is this criticism justifiable?

VI. Expound critically the Advaita view that the jīva is only a reflection of reality.

VII. "Mukti, according to Ramanuja, is not the loss of personality, but the loss in personality."

Comment on this statement.

VIII. "The goal of Indian thought is beyond logic and ethics, though they are the sole means of reaching it." Discuss.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

ESSAY

FRIDAY, 25TH MARCH] [10 A.M. TO 1 P.M.

Max. marks: 200

Write an essay on any *one* of the following subjects.—

1. The Absolute of Philosophy is not the God of religion

2. All Idealism ultimately ends in subjectivism.

3 The ethics of Ahimsā.

4 Modern Psychology has more affinities with Science than with Philosophy

ANNAMALAI UNIVERSITY

B.A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

HISTORY OF EUROPEAN PHILOSOPHY

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

Max. marks 200

[*Answer* FIVE *questions. Attempt at least one question from each of the three groups.*]

I

I. Compare the views of Plato and Aristotle regarding the relation between form and matter

II. Expound critically the view that the pantheism of Plotinus is a combination of Greek and Indian thought

II

III. Consider whether the system of Spinoza is the logical completion of Cartesian Dualism

IV. Describe Hume's view of the principle of causality Does Kant succeed in overcoming its defects?

V. Enquire whether Leibniz succeeds in reconciling the differences between apriorism and empiricism.

III

VI. Estimate Kant's criticism of the ontological argument for the existence of God and the value of his moral proof.

VII. Do you think there can be a metaphysic that transcends experience? What is the view of Kant?

VIII. 'The dialectic method of Hegel fails to distinguish between distincts and opposites.' Discuss.

ANNAMALAI UNIVERSITY

B.A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

INDIAN PHILOSOPHY

MONDAY, 28TH MARCH] [10 A.M. TO 1 P.M.

[*Answer* FIVE *questions.*]

Max. marks : 200

I. Consider the view that the Advaita does not recognise the Veda as a pramāṇa in the absolute sense.

II. Expound the theory that avidyā is not a mere negation of jnāna, but has a positive meaning.

III. Explain the Brahma-Parināma-Vāda. Why does Śaṅkara reject it?

IV. Advaitic Philosophy does not accept the idea of Īśwara 'as ultimate'. Do you think this view satisfies the needs of religion?

V. Institute a comparison between the Advaitic theory of the Sākṣin and the Sānkhya theory of the purusa.

VI. "If mukti is the nature of the self, and not a state to be newly attained, there is no need for spiritual endeavour." Is this criticism of Advaita justifiable?

VII. "The Advaitic idea of Nirvāṇa is similar to that of Buddhism; the former is the positive aspect and the latter, the negative aspect." Discuss.

VIII. "The distinction which Śankara draws between the transcendental and the phenomenal commits him to a dualistic metaphysics." Examine this statement.

ANNAMALAI UNIVERSITY

B.A. (Hons.) Degree Examination—Final, 1938

BRANCH I

PHILOSOPHY

CONTEMPORARY EUROPEAN PHILOSOPHY

TUESDAY, 29TH MARCH] [10 A.M. TO 1 P.M.

[*Attempt* FIVE *questions only*]

Max. marks 200

I ‘Hume's Credo seems to be hardly worth contending for, because the nature of his conclusion is determined by the restricted nature of the premises from which it is deduced.’ Explain.

II. ‘In Kant's immediate successors, the concept of value being set in opposition to *reason* appears inevitably as subjective and wholly arbitrary.’ Discuss.

III. “The faults of Naturalism” Professor Wallace says “spring from a creditable motive It is the faith of science—the human faith—that ‘all's reason and all's law’” Comment on this statement.

IV. ‘Mentalism is just Berkelianism *in excelsis* and the reasoning is therefore of the same circular character.’ Examine.

V. ‘Humanity with a capital H is neither better nor worse fitted to be a God than the unknowable with a capital U, each being a barren abstraction.’—Explain.

VI ‘The presence of the Ideal, the reality of God within us, is the solution of the question at issue between Immanence and Transcendence.’—Discuss.

VII. What, according to Pringle-Pattison, is the status of the finite self?

VIII. Is Pringle-Pattison's ‘Idea of God’ theistic or pantheistic?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH II

HISTORY

HISTORY OF INDIA

MONDAY, 21ST MARCH] [10 A.M. TO 1 P.M.

[*Answer any* FIVE *questions.*]

I. Give a brief account of the evidences regarding the Mohenjo-Daro—Harappa civilisation, with special reference to its age and authors.

II. Discuss the chief sources of information which enable us to reconstruct the social and economic conditions of Northern India from the seventh century to the fourth century B. C

III. Critically examine the inscriptions of Asoka with a view to determining his personal religion.

IV. Discuss the place of Kanishka in the development of Buddhism and in the extension of Indian culture abroad.

V. Who were the Maukharis? Discuss the part they played in Indian History.

VI. Indicate the value of the records left by the Chinese travellers for the student of Hindu India, with particular reference to the political and religious condition of the land.

VII. Trace the life and career of Harsha, citing authorities wherever possible.

[T. O.

VIII What factors facilitated the establishment and consolidation of Muslim rule in North India?

IX Give a critical estimate of the achievements of Alauddin Khilji in the development of Muslim polity in North India

X How do you account for the decline and disruption of the Vijayanagar empire after the death of Krishnadeva Raya

XI What were the inherent administrative and military defects in the Moghul system of government under Babar and Humayun? How far and with what effect were they attempted to be removed by Akbar?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH II

CONSTITUTIONAL HISTORY OF GREAT BRITAIN AND IRELAND

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

[*Answer Part A*, TWO *questions from Part B and* TWO *questions from Part C.*]

A

Comment on any *five* of the following passages.

I. Be it.. .enacted that always the king for the time being with the advice of his honourable council ....may set forth at all times by proclamations . and those same shall be obeyed . . . as though they were made by act of parliament for the time in them limited, unless the king's highness dispense with them or any of them under his great seal

(The Lex Regia, 1539.)

II. And .that it may be established and enacted . that such jurisdictions......and pre-eminences, spiritual and ecclesiastical, as by any spiritual or ecclesiastical power or authority hath heretofore been. . exercised .for the correction ......of all manner of errors ....be united and annexed to the imperial crown of this realm.

(The Act of Supremacy, 1559.)

III. And the judges informed the king, that no king after the conquest assumed to himself to give any judgment in any cause . but these were solely determined in the courts of justice.

(Coke's Reports—The Case of Prohibitions, 1607.)

IV Provided that this Ordinance shall not extend to take away the power and authority of any Lieutenancy or Deputy-Lieutenancy in the several counties, cities or places, or of any *Custos Rotulorum*, or of any commission for Justice of Peace or sewers, or any commission of *Oyer* and *Terminer*, or gaol delivery.

(The Self-denying Ordinance, 1645.)

V. That all and every person and persons seized or possessed to his own use, of any estate, real or personal, to the value of £ 200, and not within the aforesaid exceptions, shall be capable to elect members to serve in Parliament for counties.

(The Instrument of Government, 1653.)

VI. That the freedom of speech and debates or proceedings in parliament ought not to be impeached or questioned in any court or place out of parliament.

(The Bill of Rights, 1689)

VII. But a usage, to grow into law, ought to be a general usage, *communiter usitata et approbata*; and which, after a long continuance, it would be mischievous to overturn. This is only the usage of a particular office, and contrary to the usage of all other justices and conservators of the peace.

(Mansfield's Decision against General Warrants, 1764.)

VIII. Be it therefore enacted. that the parliament in being at any future demise of the crown shall not be determined. or dissolved by such demise, but shall continue so long as it would have continued but for such demise, unless it should be sooner prorogued or dissolved by the crown, anything in the act passed in the sixth year of Her late Majesty Queen Anne, chapter seven, in any way notwithstanding

(Reform Act of 1867.)

IX. They (their lordships) are of opinion that where actual war is raging acts done by military authorities are not justiciable by the ordinary tribunals.

(The Lord Chancellor in Ex Parte
D. F. Marais, 1902)

B

I. Write a critical account of the police system and the judicial organization of the Anglo-Saxon period.

II. Assess the constitutional importance of the Danish invasions and settlement.

III Evaluate the contributions to constitutional progress made by the Crown and the Baronage from the Great Charter to the deposition of Edward II.

IV. What is the Lancastrian Constitutional Experiment? Is Sir John Fortescue's picture of English government a correct representation of the facts of the time?

V. Discuss the contention that in the Reformation period Parliament gained strength at the expense of the constitutional rights of the Church.

C

VI. State fully the claims of Parliament under the first two Stuarts. How far may they be called 'revolutionary'?

VII. Discuss the constitutional issues left unsettled at the Restoration and settled by the Revolution.

VIII. Give a brief account of the extension of religious toleration since 1688.

IX. Discuss the constitutional importance of the career of Wilkes.

X. Describe the place of the Crown in the constitution since the accession of Queen Victoria.

ANNAMALAI UNIVERSITY

B A (Hons) Degree Examination— Final, 1938

BRANCH II

POLITICAL THEORY

WEDNESDAY, 23RD MARCH] [10 A M TO 1 P M

[*Answer question I and* FOUR *others*]

I Comment on any five of the following extracts from Aristotle's *Politics*.

1 For political science does not make men, but takes them from nature and uses them (I, 9, 1)

2 For the slave has no deliberative faculty at all, the woman has, but it is without authority, and the child has, but it is immature (I, 13, 7)

3. Is it not obvious that a state may at length attain such a degree of unity as to be no longer a state? since the nature of a state is to be a plurality. (II, 2, 2)

4 The principle that the multitude ought to be supreme rather than the few best is capable of a satisfactory explanation, and, though not free from difficulty, yet seems to contain an element of truth (III, 11, 1)

5. But first we must determine whether there is one species of royalty or many. It is not easy to see that there are many, and that the manner of government is not the same in all of them (III, 14, 2)

ANNAMALAI UNIVERSITY

B A. (Hons.) Degree Examination—Final, 1938

BRANCH II

POLITICAL THEORY

WEDNESDAY, 23RD MARCH] [10 A.M TO 1 P M.

[*Answer question I and* FOUR *others.*]

I. Comment on any five of the following extracts from Aristotle's *Politics*.

1 For political science does not make men, but takes them from nature and uses them. (I, 9, 1)

2 For the slave has no deliberative faculty at all; the woman has, but it is without authority, and the child has, but it is immature (I, 13, 7)

3. Is it not obvious that a state may at length attain such a degree of unity as to be no longer a state?—since the nature of a state is to be a plurality. (II, 2, 2.)

4 The principle that the multitude ought to be supreme rather than the few best is capable of a satisfactory explanation, and, though not free from difficulty, yet seems to contain an element of truth. (III, 11, 1.)

5. But first we must determine whether there is one species of royalty or many. It is not easy to see that there are many, and that the manner of government is not the same in all of them. (III, 14, 2.)

6. And since innovations creep in through the private life of individuals, there ought to be a magistracy which will have an eye to those whose life is not in harmony with the government, whether oligarchy or democracy or any other. (V, 8, 13.)

7. In the Republic of Plato, Socrates treats of revolutions, but not well, for he mentions no cause of change which peculiarly affects the first or perfect state. (V, 12, 7.)

8. In the state which is best governed the citizens who are absolutely, and not merely relatively, just men must not lead the life of mechanics or tradesmen, for such a life is ignoble and inimical to virtue (VII, 9, 3.)

9 Because nature herself, as has been often said, requires that we should be able not only to work well, but to use leisure well, for, as I must repeat once and again, the first principle of all action is leisure (VIII, 3, 2)

10. Education should be based upon three principles—the mean, the possible, the becoming, these three. (VIII, 7, 15.)

II. What are the views of Plato and Aristotle on the question "whether it is more advantageous to be ruled by the best men or the best laws"?

III. State and discuss Aristotle's view of *Citizenship* or *Law* or *Education*.

- Or —

Describe those political and economic doctrines in your prescribed text which you consider applicable to the modern State.

IV. What were the political conceptions of the Roman Lawyers and the Fathers of the Church which influenced mediaeval political theory?

V. Give a short account of the *Monarchia* and scrutinise its claim to be classed with the *Politics*, the *Leviathan*, and the *Contrat Social.*

VI. Discuss the place of the Conciliar Movement *or* the Anabaptist Revolt in the history of political theory.

VII. "Speaking broadly, the task of modern thought as regards Natural Right was to apply to public law ideas and principles which the Roman jurists applied to private. The epoch-makingness of Grotius lies mainly in his application of it to international law. The importance of Locke's work is its application to constitutional law." Examine this assertion

VIII. How did the English Constitution influence Montesquieu? And how did Montesquieu influence Rousseau?

IX. Compare the political philosophy of Fichte with that of Mazzini.

X. "The rationale of property is that every one should be secured by society in the power of getting and keeping the means of realising a will which in possibility is a will directed to the social good"—T. H. GREEN. In the light of this statement review the theories of property with which you are familiar.

XI. Write a note on Anarchism *or* Idealism considered as a political philosophy.

ANNAMALAI UNIVERSITY

B A (Hons) Degree Examination—Final, 1938

BRANCH II

HISTORY

RELATIONS OF INDIAN STATES WITH THE GOVERNMENT OF INDIA

THURSDAY, 24TH MARCH] [10 A M TO 1 P M.

[*Answer question* ONE *and* FOUR *others*]

I. Comment on five of the following passages

(*a*) "The enemies of the English are my enemies, whether they be Indians or Europeans."

(Treaty between the E. I Co. and Mir Jaffar, 1757.)

(*b*) "No communication or correspondence with any foreign state whatever shall be holden by His Highness without the previous knowledge and sanction of the Company."

(Subsidiary Treaty with Mysore, 1799.)

(*c*) "The Maharana of Udaipur will not commit aggressions upon any one; and if by accident a dispute arise with any one it shall be submitted to the arbitration and award of the British Government."

(Treaty with Udaipur, 1818.)

(*d*) "The British Government will not exercise any interference in the internal administration of the Lahore State, but in all cases or questions which may be referred to the British Government, the Governor-General will give the aid of his advice. " (Treaty with the State of Lahore, 1846)

(*e*) "Be assured that nothing shall disturb the engagement just made to you, so long as your house is loyal to the Crown and faithful to the conditions of the Treaties. . . ." (Lord Canning's Sanad.)

(*f*) "Princes and Chiefs of this Empire," said His Excellency, "Her Majesty regards her interests as identified with yours."

(Lord Lytton, 1877)

(*g*) "When we started this conference we came, no doubt, with ideas of arguing for Dominion for British India, but we had not been here many days before the magnificent action of the Princes made a wider and larger India possible." (The Rt. Hon'ble V. S. Srinivasa Sastri : II R. T. C, 1931)

(*h*) "Subject to the provisions of the Instrument of Accession of that State, nothing in this Act affects the rights and obligations of the Crown in relation to any Indian State"

(Government of India Act, 1935)

(*i*) "The idea that the States and their Rulers are an anachronism in the political life of India to-day, that they are merely apocryphal passages in the history of India, interpolated by a Machiavellian hand, which could be torn away without affecting the whole is so utterly unhistorical as to require no comment"

(H H. The Maharaja of Patiala, 1935)

II. Compare the two treaties with Mysore dated 1799 and 1881 and point out in detail the growth of a more stringent policy towards that State.

III. "The Paramount Power has had of necessity to make decisions and exercise the functions of Paramountcy beyond the terms of the treaties in accordance with changing political, social and economic conditions" Explain, with reference to the history of Hyderabad from 1800 to 1926.

IV. Bring out the constitutional significance of:—

(*a*) The Baroda case (1873-75).

and (*b*) The Manipur case (1891-92).

V. Discuss the general principles which should be adopted in the classification of Indian States

VI. Define Paramountcy. Describe the administrative machinery through which it is exercised over the States from day to day.

VII. How does the Government of India Act of 1935 seek to alter the present position of the States? What benefits is the change likely to confer on (*a*) the Indian States, and (*b*) the subjects of the States?

VIII. When does the Paramount Power intervene in the internal affairs of a State? Illustrate your answer with examples drawn from recent history (after 1881).

IX. What is a Zollverein? How does it differ from a Federation? How far can you justify the claims of the States for a share in British Indian revenues?

X Define the military obligations of the Indian States; and show how a policy of distrust and isolation has given place to a policy of union and co-operation in military matters.

ANNAMALAI UNIVERSITY

B A (Hons) Degree Examination—Final, 1938

BRANCH II

HISTORY

HISTORY OF MODERN IMPERIALISM

FRIDAY, 25TH MARCH] [10 A.M TO 1 P.M.

[*Answer* FIVE *questions*]

I Describe the attempts made by the Dutch to establish a colonial empire in the 17th century. How far were they successful?

II. What were the circumstances that led to the enunciation of the "Monroe Doctrine"? What have been its consequences?

III. Explain the colonial activities of France in the years 1815-1880. In what respects did they constitute a departure from the ideas of imperialism current at the time?

IV. Estimate the importance of the work of Benjamin Disraeli and Lord Lugard in British Imperial history

V. "The keynote of all his work was a passionate, but sane, imperialism." Discuss this estimate of Lord Cromer.

VI. Trace the different stages in the growth of the Australian Colonies down to the establishment of Federation, and examine to what extent the Commonwealth has been a success.

[T. O.

VII. "In South-Africa, the native question presents difficulties of the most fundamental characteristics for which no solution is yet in sight" Discuss

VIII. Examine the importance of the Middle East to Britain in the light of developments that have taken place there since 1900.

IX. "Hands off China!" How has the enunciation of this policy by Japan affected the attitude of the important European powers and America towards the problems of the Far East?

X. Examine how the system of "Mandates" has worked out in practice and how far it has realised the objects with which it was introduced at the Treaty of Versailles

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCHES II & III

HISTORY

MODERN CONSTITUTIONS WITH SPECIAL REFERENCE TO RECENT EUROPEAN HISTORY

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

[*Answer* FIVE *questions, taking not more than* THREE *from either part*]

A

I. In what manner did the writings of the political philosophers shape the course of the French Revolution?

II. What were the objects of the Holy Alliance of 1815? Compare them with those of the League of Nations.

III. Estimate the effect of the Revolutions of 1830 and 1848 on the Netherlands and France.

IV. Describe the chief stages in the political unification of Germany in the nineteenth century.

V. Write an account of the character, achievements and political views of (*a*) Thomas Masaryk, or (*b*) Benito Mussolini.

VI. "The world has almost ceased to believe that written compacts have any binding effect on the national states that sign them." (Curtis.) Illustrate the truth of this statement from the post-war history of Europe.

[T. O.

B

VII. Discuss the place of the Second Chamber in a federal constitution. Which is the most powerful Second Chamber in the world ?

VIII. How does the Swiss Council or Board differ both from the Cabinet Government of England or France, and from the Presidential Government of America ?

IX. Is it true to say that Direct Legislation is, on the whole, conservative, rather than progressive ? Illustrate your answer from the history of Referenda in Switzerland and the American States.

X. Trace the stages by which National Socialism rose to political power in Germany.

XI. Estimate the importance of the Statute of Westminster (1931) from the point of view of the Sovereignty of the Dominions.

XII. "The power that creates a dictator may destroy him. Responsible ministers die in bed." (Jennings.) Discuss.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH II

GENERAL ECONOMICS

TUESDAY, 29TH MARCH] [10 A M TO 1 P M.

[*Answer any* FIVE *questions*]

I. "The idea that Economics assumes a world of economic men concerned only with money making and self-interest is wholly wrong. The so-called economic man is only an expository device." Discuss.

II. Examine the role of foreign capital in the economic development of India. Would you place any restrictions on its free entry ?

III. Distinguish between horizontal and vertical combinations Explain the factors which have led to their growth in recent years and the problems of state regulation they give rise to

IV. Discuss the limitations of the cost of production theory. How far can the values of goods in joint supply be explained by that theory ?

V. The theory of international trade must only be regarded as a special case of the general theory of value Discuss.

VI. What are "gold points"? Explain how the exchange values of currencies not on the gold standard are determined.

[T. O.

VII The Reserve Bank of India is a bankers' bank. Examine this view

VIII "It is an illusion to suppose that the general wage level can be appreciably and permanently raised by trade union action" Discuss

IX. "To argue that rent does not enter into marginal costs in any sense which is not equally true of wages and profits is to lose contact with reality." Discuss

X What is meant by discriminating protection? How far has the policy of discriminating protection contributed to the development of Indian industries?

XI. "Taxation for revenue only" In what circumstances have governments departed from the above principle?

XII. Profits form no part of marginal costs Marginal costs contain a certain element of normal profit.

Which of the above two statements do you accept and why?

ANNAMALAI UNIVERSITY

B. A. (Hons) Degree Examination—Final, 1938

BRANCHES II & III

ESSAY

PART I—HISTORY

MONDAY, 28TH MARCH] [10 A M TO 1 P.M.

[*Any* ONE *of the following topics*]

1 "In India the ideas of the Vedic period are still a vital force."

2. The Yellow Peril

3 Soviet Democracy.

PART II—ECONOMICS

Write an essay on *any one* of the following subjects:—

1. The Rehabilitation of Provincial Finances

2. The Economics of Prohibition

3 The future of International Trade

ANNAMALAI UNIVERSITY

B. A (Hons) Degree Examination—Final, 1938

BRANCH III

OPTIONAL SUBJECT I—HISTORY OF ECONOMIC THOUGHT

MONDAY, 21ST MARCH] [10 A. M. TO 1 P M.

[*Answer* FIVE *questions, not more than* THREE *from one part*]

PART I

I. Comment on *any three* of the following —

(*a*) "The liberal reward of labour, therefore, as it is the effect of increasing wealth, so it is the cause of increasing population "

(*b*) "The proportion between capital and revenue, therefore, seems everywhere to regulate the proportion between industry and idleness"

(*c*) "High wages of labour and high profits of stock, however, are things, perhaps, which scarce ever go together, except, in the peculiar circumstances of new colonies"

(*d*) "All those improvements in the productive powers of labour, which tend to reduce the real price of manufactures tend indirectly to raise the real rent of land."

(*e*) "The capital error of this system seems to lie in its representing the class of artificers, manufacturers, and merchants as altogether barren and unproductive."

(*f*) "From one fruitless care it (the attention of Government) was turned to another care much more intricate, much more embarrassing, and just equally fruitless."

II. How far, in Adam Smith's view, was the 'policy of Europe' an obstruction to the tendency to equality of the whole of the advantages and disadvantages of the different employments of labour and stock? Give a detailed analysis of this policy.

III. What relative positions were assigned by Adam Smith to labour, corn and money as standards of value? Which was his ultimate preference?

IV. "But, though the market price of every particular commodity is in this manner continually gravitating, if one may say so, towards the natural price, yet sometimes particular accidents, sometimes natural causes, and sometimes particular regulations of police may, in many commodities, keep up the market price, for a long time together, a good deal above the natural price."

What are these particular accidents, these natural causes and these regulations of police?

V. What was Adam Smith's general attitude towards restraints upon importation? Was he prepared to modify it in special cases?

VI. "Political Economy, as it left the hands of Adam Smith, was by no means a complete and rounded system of doctrine. Like all the other works of frail man, it has its errors, its gaps, its ambiguities and its bias." Discuss.

PART II

VII. Trace the development of the Doctrine of the Wages Fund from Adam Smith to John Elliott Cairnes.

VIII. What place does John Stuart Mill occupy in the history of Economic thought?

IX. "Saint-Simon was neither a Socialist nor a Democrat, but a Liberal with a strong ethical bias." Discuss with reference to his doctrines.

X. Examine the view that in fundamentals the Austrian School was complementary rather than antagonistic to the Classical School.

XI "It was Ricardo's crude generalizations which gave modern socialism its fancied scientific basis, and provoked its revolutionary form." Elucidate.

XII. Give a short exposition of J. A. Hobson's main theories, and show how far he succeeds in bridging the gap between economic theory and social reform.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH III

ECONOMICS I

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

[*Answer any* FIVE *questions.*]

I The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking." Discuss.

II. What do you mean by the 'optimum' theory of population? Discuss whether India has exceeded the optimum limit.

III. Indicate the technical and economic influences that have brought about a great increase in the size of the representative business unit. Account for the survival of small industries like the cottage industries of India.

IV. Explain and illustrate the difference between the Law of Diminishing Return and the Law of Increasing Return.

V. Examine the conception of the 'margin' and the use made of it in economic analysis.

VI. "Cost of production is coming more and more to mean joint cost. The price of a given product may bear only a remote relation to its individual cost of production." Explain and illustrate.

[T. O.

VII. Explain the determination of value under conditions of imperfect competition.

VIII. State clearly the Marginal Productivity theory of wages bringing out the elements of strength and weakness in it.

IX. Explain what determines the rate of interest. Account for the wide differences in the gross rate of interest.

X. Explain the concept of National I[illegible] and describe the methods by which it is measured.

ANNAMALAI UNIVERSITY

B. A. (Hons) Degree Examination—Final, 1938

BRANCH III

MODERN ECONOMIC HISTORY

WEDNESDAY, 23RD MARCH] [10 A M TO 1 P M.

[*Answer any* FIVE *questions*]

I. Account for the economic pre-eminence of Great Britain in 1815.

II. "Economic change is never catastrophic." Discuss this dictum in the light of the Industrial Revolution in the leading countries.

III. Discuss the ideas and influence of *either* Joseph Chamberlain *or* Friedrich List.

IV. Account for the late development and rapid growth of the factory industry in Germany.

V. Trace the influence of the French Revolution on the economic development of modern Europe.

VI. Compare the general features of the labour movement in France and England.

VII. What were the reactions of the opening up of the United States in the latter half of the nineteenth century on economic development in Europe?

VIII. Trace the development of the Indian cotton industry since the Great War.

IX Compare the effects of the World War with those of the Economic Depression on the foreign trade of India.

X. Describe the landmarks in the history of the Rupee from 1835 to 1935

XI. Trace the influence of labour legislation in India on industrial welfare.

ANNAMALAI UNIVERSITY

B. A (Hons) Degree Examination—Final. 1938

BRANCH III

SPECIAL SUBJECT—LABOUR PROBLEMS

THURSDAY, 24TH MARCH] [10 A M TO 1 P.M.

[*Answer any* FIVE *questions*]

I. " Freedom for the worker has been secured through his progress from a position of status to one of contract " Discuss.

II How much does conciliation accomplish in the matter of labour disputes ? Do you recommend that government promote conciliation in this country ?

III. What is 'sweating'? How was this problem solved in England ?

IV. Trace the development of Trade Unionism in Great Britain since 1880

V. What, in your opinion, are pre-requisites of true profit-sharing ? Describe a scheme of profit-sharing in operation in England *or* in India.

VI. Describe the peculiarities of industrial labour in India. How can it be made more efficient ?

VII. State and criticise the principal provisions for workmen's compensation in India.

[T.O.

VIII. Contrast Socialism and Fascism from the point of view of labourers.

IX Bring out the relative importance of the various causes of unemployment.

X. Compare the methods of British Trade Unions and of Indian Trade Unions.

XI. Examine the effects of welfare work on industrial efficiency and peace Illustrate with reference to India.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH III

ECONOMICS II

FRIDAY, 25TH MARCH] [10 A.M. TO 1 P.M.

[*Answer any* FIVE *questions*]

I. Give a short account of the Federal Reserve System of the United States of America, and show how it is, in essentials, different from the Central Banking Systems of other countries

II. What instruments of credit control should a Central Bank have at its disposal for making its policy effective? To what extent does the Reserve Bank of India possess these instruments?

III. Compare the facilities for industrial finance in India with those available in Germany and Great Britain, and suggest measures by which India can be brought into line with those countries.

IV. "The true theory of the value of money is not indentical with, but includes the Quantity Theory." Discuss.

V. "The international gold standard creates, not a common price level, but an integrated price and income structure, the various parts of which stand in an organic relationship to one another." Elucidate.

VI. What significance do you attach to the exports of gold from India in recent years? Have they had any economic and financial effects?

[T.O.

VII Discuss the relative merits of tariffs, quotas and import boards as measures for restricting imports.

VIII. Can a well-planned programme of public works help a country to tide over a period of depression? Is this proposal consistent with the theoretical analysis of the trade cycle?

IX Examine the purpose and effects of Bilateral Trade Agreements Answer with special reference to the foreign trade of India

X. In what respects is the marketing of agricultural produce in India defective? Suggest improvements

XI Review the policy of Discriminating Protection in India with special reference to the Sugar and Steel industries

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH III

PUBLIC ECONOMICS

TUESDAY, 29TH MARCH] [10 A. M. TO 1 P. M.

[*Answer any* FIVE *questions.*]

I. The technique of taxation is to pluck the goose with as little squealing as possible. Criticise the statement in the light of recent developments.

II. "Taxation may be the only practicable means of creating a better and more secure livelihood." Elucidate the implications of this statement with special reference to India.

III. Account for the rapid growth of public expenditure in recent times. In what circumstances would you approve of budgeting for a deficit ?

IV. "The concept of taxable capacity is worthless and misleading." Discuss.

V. Classify the main sources of revenue for the Provinces in India under the new Act of 1935. How far are they adequate ?

VI. Compare the merits and defects of the system of annual budgets with those of a long-term budgeting system. In what spheres of public outlay is long-term budgeting specially desirable ?

[T. O.

VII. Examine the place of excise duties in the Indian tax system and their scope for further development.

VIII "Public utilities are now used everywhere as indirect tax-collectors." Examine the statement and discuss how far they are and can be utilized as sources of revenue in India.

IX. "The right to strike." In what circumstances and in respect of what type of industries may the State restrict this right?

X. Distinguish between (*a*) an internal debt and an external debt, and (*b*) productive debt and unproductive debt. Examine the position of the debts of the Government of India in the light of your distinctions.

XI. The problem of the incidence of a tax is only an aspect of the general theory of value. Discuss On whom is the incidence of the following taxes?—(1) Export duties. (2) Income Tax. (3) Indian Land Revenue.

XII "The weak spot in the Indian Fiscal structure is local finance." Discuss

ANNAMALAI UNIVERSITY

B A. (Hons) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

SHAKESPEARE

MONDAY, 21ST MARCH] [10 AM TO 1 P M.

[*N.B.—Answer Section A and* FOUR *other questions choosing* TWO *from Section B, and* TWO *from Section C*]

SECTION A

I. Annotate *five* of the following passages with reference to their context —

(*a*) He that a fool doth very wisely hit
Doth very foolishly, although he smart,
Not to seem senseless of the bob if not,
The wise man's folly is anatomized
Even by the squand'ring glances of the fool.

(*b*) No, truly, for the truest poetry is the most feigning, and lovers are given to poetry, and what they swear in poetry may be said as lovers they do feign.

(*c*) Down, down, I came, like glistering Phaethon,
Wanting the manage of unruly jades
In the base court? Base court, where kings grow base,
To come at traitors calls and do them grace.

(*d*) O! What pity is it
That he hath not so trimmed and dress'd his land
As we this garden.

(*e*) Bring forth men-children only;
For thy undaunted mettle should compose
Nothing but males

(*f*) But wherefore could not I pronounce
"Amen"?
I had most need of blessing and "Amen"
Stuck in my throat

(*g*) we poor unfledg'd
Have never wing'd from view o' th'nest,
[nor know not
What air's from home. Haply this life is
[best,
If quiet life is best, sweeter to you
That have a sharper known, well
[corresponding
With your stiff age

(*h*) My dear Lord
Thou art one of the false ones, now I
[think on thee,
My hunger's gone, but even before, I was
At point to sink for food

(*i*) Folly, in wisdom hatched,
Hath wisdom's warrant, and the help of
[school,
And wit's own grace to grace a learned fool.

SECTION B

II "Tragedy demands some sympathy with the fortunes of its hero, but where is there room for sympathy in the fortunes of a disloyal, self-seeking murderer?" How does Shakespeare deal with this problem in *Macbeth*?

— *Or* —

"Lady Macbeth is merely detested"
(Dr Johnson.)

Do you agree?

III. What features of *Love's Labour's Lost* suggest that it is the work of a beginner in dramatic composition?

— *Or* —

Compare the relative merits of the texts of Shakespeare's Quartos and Folios illustrating your answer with special reference to *Love's Labour's Lost*

IV "In *As You Like It* we may distinguish three distinct types of humour." Discuss and illustrate

V. "When Shakespeare wrote *Richard II* he was still more poet than dramatist" Consider this view

VI Comment on the *denouement* in *Cymbeline*

SECTION C

VII "The Romantic critics tended to criticise Shakespeare's characters rather than Shakespeare's plays But then Shakespeare invited this treatment" Examine the remark in the light of the present-day criticism of Shakespeare

VIII Does the transition from the comedies to the tragedies suggest any change in Shakespeare's attitude towards women?

IX Examine Shakespeare's treatment of *one* of the following —Childhood, old age, reconciliation

X Do you consider Shakespeare's plays fail in their appeal to modern audiences? Give reasons for your views

XI Discuss the influence of the boy actor in Shakespeare's dramatic technique

XII Examine the statement that there is no character in Shakespeare's plays with whom it is not possible to feel sympathy

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

HISTORY OF THE ENGLISH LANGUAGE

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P M.

[*Answer* ONE *question from* EACH *group.*]

I (1) What is meant by the following terms?—front vowel, back consonant, diphthong, assimilation. Illustrate briefly your answer.

(2) Give some account of Verner's Law.

(3) What are the characteristic phonological features of West Germanic?

II. (1) "The influence of nasals has been of the same character whether exercised in the Germanic or in the Old English period." Explain and illustrate.

(2) What isolative and combinative changes did West Germanic *au* undergo in West Saxon down to the end of Alfred's reign?

(3) Write a note on Back-mutation in West Saxon.

III. (1) How would you classify the Middle English dialects?

(2) Write a careful account of the Middle English lengthening of vowels in open syllables.

(3) What new diphthongs were developed in Middle English?

[T. O.

IV. (1) What is the philological importance of the study of place-names?

(2) How does Middle English ō′ develop in Modern English? Consider both isolative and combinative changes.

(3) What do we learn concerning the pronunciation of consonants from the following rhymes.—ferment-vermin (Swift), fight-white (Spenser), sex-neglects (Pope), adust-wurst (Bokenam), would-mud (Waller), wishes-kisses (Crashaw)?

V. (1) Classify the Old English strong verbs and justify your classification.

(2) What are the causes of the simplification of Old English noun declensions in Middle English?

(3) Explain historically the present-day forms :—meadow, brethren, its, those.

VI (1) How do vowels and diphthongs afford criteria for distinguishing the Skandinavian element in Middle English?

(2) Comment on the changes of meaning in the history of :— sad, glad, tide, doctor.

(3) Comment on the syntax of the following :—

(*a*) Of smale houndes hadde she.
(*b*) Shall Rome stand under one man's awe?
(*c*) I am woe for it
(*d*) He was given a book.

ANNAMALAI UNIVERSITY

B. A (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

MODERN LITERATURE I

WEDNESDAY, 23RD MARCH] [10 A M TO 1 P M

[*N B—Answer Question I and* FOUR *other questions from* GROUPS *C and D, choosing* TWO *from* EACH *group*]

I Annotate with reference to the context any *five* of the following, taking not more than *three* from either group —

GROUP A

(*a*) O cursed Eld the canker worme of writs,
How may these rimes, so rude as doth appeare,
Hope to endure, sith workes of heavenly wits
Are quite devourd, and brought to nought by little bits?

(*b*) As when Latonaes daughter cruell kynde,
In vengement of her mothers great disgrace,
With fell despight her cruell arrowes tynde
Gainst Wofull Niobes unhappy race,
That all the gods did mone her miserable case

(*c*) He wears a Lord's revenue on his back,
And, Midas-like, he jets it in the court,
With base outlandish cullions at his heels,
Whose proud fantastic liveries make such show
As if that Proteus, god of shapes, appeared

(*d*) Make trial now of that philosophy,
That in our famous nurseries of arts
Thou suck'dst from Plato and from Aristotle.

(*e*) He that can compass me, and know my drifts,
May say he hath put a girdle 'bout the world,
And sounded all her quick-sands.

(*f*) Greek is turned Turk: we are only to be saved by the Helvetian translation.

GROUP B

(*a*) Public revenges are for the most part fortunate; as that for the death of Caesar; for the death of Pertinax; for the death of Henry the Third of France.

(*b*) As for other losses, the poet's relation doth well figure them, that he that preferred Helena, quitted the gifts of Juno and Pallas.

(*c*) And thus was this land saved from infidelity (as the remaine of the Old World was from water) by an Ark, through the Apostolicall and Miraculous Evangelisme of Saint Bartholomew.

(*d*) But only for Gode's first creature, which was Light, To have light of the growth of all parts of the world.

(*e*) And ask a Talmudest what ails the modesty of his marginall Keri, that Moses and all the Prophets cannot perswade him to pronounce the textuall Chetiv.

(*f*) From that time ever since, the sad friends of truth, such as durst appear, imitating the carefull search that Isis made for the mangl'd body of Osiris, went up and down gathering up limb by limb still as they could find them.

GROUP C

II. "Kyd shows supreme skill in the building up of his plots." Consider this estimate with reference to his *Spanish Tragedy.*

— *Or* —

"Ben Jonson's characters are more like machines, governed by mere routine or by the convenience of the poet whose property they are." Discuss this remark of Hazlitt with reference to the plays prescribed.

— *Or* —

Compare the pictures of citizen life presented by Ben Jonson, Beaumont and Fletcher and Dekker.

III. Marlowe's *Edward II* is "History well dramatized." Comment.

IV. "Whether the spirit of greatness or of woman
Reign most in her, I know not; but it shows
A fearful madness." Consider this estimate of the Duchess of Malfi.

— *Or* —

The play (*Duchess of Malfi*) could well have ended with Act IV. Discuss.

V. "The Fourth Book of *The Faerie Queene* is not as some critics have held, formless. By contrast and parallelism a strict pattern is imposed on the diversified narrative." Examine this view.

VI. Write an essay on *either* Spenser's similes *or* his use of pageantry and emblem in the prescribed poems.

— *Or* —

"The clearest example of Spenser's nature poetry is the description of the marriage of the Thames and the Medway." Justify.

GROUP D

VII. Discuss the artistic qualities of the prose of Malory and Browne.

— *Or* —

"Whether the picture conform to reality is doubtful, but artistically it is an astonishing success." Consider this estimate of Sir Thomas More's portrait of King Richard III.

VIII. What was Bacon's conception of the Essay, and how does it differ from that of a typical modern essayist?

— *Or* —

What light do the prescribed essays throw on the character of Bacon as a man and as a politician?

IX. What is the value of Bacon's *New Atlantis* considered (*a*) as a narrative, (*b*) as a contribution to scientific thought?

X. What qualities of style and sentiment does *Areopagitica* share with the poetry of Milton?

— *Or* —

"The whole value of any thesis upon freedom of publication lies in the establishment of the limits within which the freedom should be exercised. Milton does not contribute anything to a clear definition of those limits." Discuss.

XI. "Look in thy heart and write" Do you find in the lyrics of Elizabethan poets this account of sincerity and naturalness?

— *Or* —

Write short notes on *two* of the following —

(i) The Songs of Herrick.
(ii) The Romantic Ballad.
(iii) Hero and Leander.
(iv) The Love Poems of Donne.

ANNAMALAI UNIVERSITY

B. A. Honours Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE & LITERATURE

BEOWULF AND OTHER OLD ENGLISH TEXTS

THURSDAY, 24TH MARCH] [10 A.M. TO 1 P.M.

I. Translate closely, but idiomatically, *three* of the following:—

(*a*) Þā sume dæge rād se cyng ūp be þǣre ēa, ond gehāwade hwǣr mon mehte þā ēā *forwyrcan,* þæt hīe ne mehton þā scipu ūt brengan; ond hīe þā swā dydon, *worhton* þā tū geweorc on twā healfe þǣre ēās. Ðā hīe þā þæt geweorc furþum ongunnen hæfdon, þā onget se here þæt hīe ne mehton þā scypu ūt brengan; þā forlēton hīe hīe, ond ēōdon ofer land þæt hīe gedydon æt Cwātbrycge be Sǣfern, ond þǣr geweorc worhton. Ðā rād sēō fird west æfter þǣm herige, ond þā men of Lundenbyrig gefetodon þā scipu, ond þā ealle þe hīe ālǣdan ne mehton tōbrǣcon, ond þā þe þǣr stǣlwyrþe wǣron binnan Lundenbyrig gebrōhton.

(*b*) Ond þǣr is mid Estum þēāw, þonne þǣr biþ man dēād, þæt hē līþ inne unforbærned mid his māgum ond frēōndum mōnaþ, ge hwīlum twēgen; ond þā kyningas ond þā ōþre hēāhþungene men swā micle leng swā hī māran *spēda* habbaþ, hwīlum healf gēār, þæt hī bēoþ unforbærned ond licgaþ bufan eorþan on hyra hūsum. Ond ealle þā hwīle þe þæt līc biþ inne þǣr sceal bēōn gedrync ond plega, oþ þone dæg þe hī hine *forbærnaþ*. Þonne þȳ ylcan dæge þe hī hine tō þǣm āde beran wyllaþ, þonne tōdǣlaþ hī his feoh, þæt þǣr tō lāfe biþ æfter þǣm gedrynce ond þǣm plegan, on fīf oþþe syx, hwȳlum on mā, swāswā þæs fēōs andefn biþ.

(*c*) Þāgēn tōætȳhte Cēfi ond cwæþ, þæt hē wolde Paulinus þone bisceop geornlīcor gehȳran be þām Gode sprećende, þām þe hē bodade. Þā hēt se cyning swā dōn. Þā hē þā his word gehȳrde, þā clypode hē ond þus cwæþ: "Geare ic þæt ongeat, þæt þæt nōwiht wæs þæt wē beēōdan; forþon swā micle swā ic geornlīcor on þām bigange þæt sylfe sōþ *sōhte*, swā ic hit lǣs *mētte*. Nū þonne ic openlīce ondette, þæt on þysse lāre þæt sylfe sōþ scīneþ þæt ūs mæg þā gyfe syllan ēcre ēādignesse ond ēces līfes hǣlo. Forþon ic þonne nū lǣre, cyning, þæt þæt templ ond þā wīgbedo, þāþe wē būton wæstmum ǣnigre nytnisse hālgodon, þæt wē þā hraþe forlēōsen ond fȳre forbærne."

(*d*) Witodlīce Cūþberhtus fērde, swāswā his gewuna wæs, ymbe gelēāffulre bodunge, Þæt hē þām ungelǣredum folce līfes weig tǣhte. Þā flēāh sum earn ætforan him on sīþe; ond hē his gefēran befrīnan ongann, hwā hī tō þām dæge āfēdan sceolde. Ðā cwæþ his gefēra þæt hē gefyrn smēāde, hwǣr hī bigleofan biddan sceoldon, þāþā hī þā fare fērdon būton wiste. Cūþberhtus þā him tōgēānes cwæþ: "Lā hwæt! se ælmihtiga God mæg for ēāþe unc þurh þisne earn *ǣt* forescēāwian, sēþe giū ǣr Elīan āfēdde þurh þone sweartan hremm ǣr hē tō heofonan sīþode." Hī þā fērdon forþ sīþigende, ond efne! se earn on þām ōfre gesæt, mid fisce geflogen þone hē þǣrrihte *gefēng*.

II. Translate closely, but idiomatically, *three* of the following:—

(*a*) Ēalā beorht bune! ēālā byrnwiga!
ēālā þēōdnes þrym! Hū sēō þrāg gewāt,
genāþ under nihthelm, swā hēō nō wǣre.
Stondeþ nū on lāste lēōfre duguþe
weal wundrum hēāh, wyrmlīcum fāh
eorlas *fornōman* asca þrȳþe,
wǣpen wælgīfru, wyrd sēo mǣre;
ond þās stānhleoþu stormas cnyssaþ,

hrīþ hrēosende   hrūsan bindeþ,
wintres wōma,   þonne won *cymeþ*,
nīpeþ nihtscūa,   norþan onsendeþ
hrēo hæglfare   hæleþum on andan.

(*b*) Oft Scyld Scēfing   sceaþena þrēātum
monegum mǣgþum,   meodosetla oftēāh,
egsode eorlas,   syþþan ǣrest wearþ,
fēāsceaft funden;   hē þæs frōfre gebād,
wēōx under wolcnum,   weorþmyndum þāh,
oþþæt him ǣghwylc   ymbsittendra
ofer hronrāde   hȳran scolde,
gomban gyldan;   þæt wæs gōd cyning.
Ðǣm eafera wæs   æfter cenned
geong in geardum,   þone God sende
folce tō frōfre;   fyrenþearfe ongeat,
þæt hīe *ǣr* drugon   aldorlēāse
lange hwīle.

(*c*) Feala ic on þām beorge   gebiden hæbbe
wrāþra wyrda: geseah ic weruda God
þearle þenian;   þȳstro hæfdon
bewrigen mid wolcnum   Wealdendes hrǣw,
scīrne scīman;   sceadu forþēōde
wann under wolcnum;   wēōp eal gesceaft,
cwīþdon Cyninges fyll.   Crīst wæs on rōde.
Hwæþere þǣr fūse   feorran cwōman
tō þām Æþelinge;   ic þæt eall behēōld.
Sāre ic wæs mid sorgum gedrēfed;   hnāg ic hwæþre þām secgum tō handa
ēāþmōd elne mycle.   Genāmon hīe þǣr ælmihtigne God,
āhōfon hine of þām hefian wīte;   forlēton mē þā hilderincas
standan stēāme *bedrifenne*;   eall ic wæs mid strǣlum forwundod.

(*d*) Satan maþelode, sorgiende spræc,
sēþe helle forþ healdan sceolde,
gȳman þæs grundes; wæs ǣr Godes engel
hwīt on heofne, oþ hine his hyge forspēōn
ond his ofermētto ealra swīþost,
þæt hē ne wolde wereda Drihtnes
word wurþian (wēōll him oninnan
hyge ymb his heortan, hāt wæs him ūtan
wrāþlīc wīte); hē þā worde cwæþ:
"Is þes ænga stede ungelīc swīþe
þām ōþrum, þe wē ǣr *cūþon*,
hēān on heofonrīce, þe mē mīn *Hearra* onlāg,
þēāh wē hine for þām Alwealdan āgan ne mōston,
rōmigan ūres rīces.

III. Write explanatory philological notes on the words italicised *either* in Question I *or* in Question II.

IV. Translate *three* of the following and state their context:—

(*a*) Ðonne onwæcneþ eft wineléās guma,
gesihþ him biforan fealwe wēgas,
baþian brimfuglas, brǣdan feþra,
hrēōsan hrīm ond snāw hagle gemenged.
Þonne bēōþ þȳ hefigran heortan benne
sāre æfter swǣsne; sorg biþ genīwad.

(*b*) Wæs se gryre lǣssa
efne swā micle, swā biþ mǣgþa cræft,
wīggryre wīfes, be wǣpnedmen,
þonne heoru bunden, hamere geþrūen
sweord swāte fāh, swīn ofer helme
ecgum dyhtig andweard scireþ

(*c*) Gif hit ēōwer ǣnig mæge
gewendan mid wihte, þæt hīe word Godes,

lāre, forlǣten,   sōna hīe him þē lāþran bēōþ;
gif hīe brecaþ his gebodscipe,   þonne hē him ābolgen wurþeþ;
siþþan biþ him se wela onwended,   ond wyrþ him wīte gegearwod,
sum heard hearmscearu.

(*d*) "Hige sceal þē heardra,   heorte þē cēnre,
mōd sceal þē māre,   þē ūre mægen lȳtlaþ.
Hēr līþ ūre ealdor   eall forhēāwen,
gōd on grēōte;   ā mæg gnornian
sē þe nū fram þis wīgplegan   wendan þenceþ..."

V. Translate (unseen):—

Þā gelamp hit æt sumum sǣle, swāswā gȳt foroft dēþ, þæt Englisce cȳpmenn brōhton heora ware tō Rōmānabyrig, and Grēgōrius ēōde be þǣre strǣt tō þām Engliscum mannum, heora þing scēāwigende. Þā geseah hē betwux þām warum cȳpecnihtas gesette, þā wǣron hwītes līchaman and fægeres andwlitan menn and æþellīce gefexode. Grēgōrius þā behēōld þǣra cnapena wlite and befrān, of hwilcere þēōde hī gebrōhte wǣron. Þā sǣde him man, þæt hī of Englalande wǣron and þæt þǣre þēōde mennisc swā wlitig wǣre. Eft þā Grēgōrius befrān, hwæþer þæs landes folc crīsten wǣre þē hǣþen, him man sǣde, þæt hī hǣþene wǣron. Grēgōrius þā of innweardre heortan langsume siccetunge tēāh and cwæþ: "Wālawā! þæt swā fægeres hīwes menn sindon þām sweartan dēōfle underþēōdde." Eft hē āxode, hū þǣre þēōde nama wǣre, þe hī of cōmon? Him wæs geandwyrd, þæt hī Angle genemnode wǣron. Þā cwæþ hē: "Rihtlīce hī sind Angle gehātene, forþanþe hī engla wlite habbaþ, and swilcum gedafenaþ, þæt hī on heofonum engla gefēran bēon."

VI. Attempt *two* of the following :—

(*a*) Give some account of the manuscripts of Old English poetry.

(*b*) In what respects is *Maldon* comparable to *Beowulf*?

(*c*) Give a short account of the Old English metrical types.

(*d*) What do you know of Cynewulf *or* of Caedmon ?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

MODERN LITERATURE II

FRIDAY, 25TH MARCH] [10 A M TO 1 P M

[*Answer Question* I *and* FOUR *other questions, choosing* TWO *from Section C and* TWO *from Section D*]

I. Annotate any *five* of the following passages, choosing at least *two* from A and *two* from B —

A

(*a*) Or whether thou, to our moist vows denied,
Sleep'st by the fable of Bellerus old,
Where the great Vision of the guarded Mount
Looks toward Namancos and Bayona's hold.

(*b*) And, O ! too like
In sad event, when to the unwiser son
Of Japhet brought by Hermes, she ensnared
Mankind with her fair looks, to be avenged
On him who had stole Jove's authentic fire.

(*c*) Yet Corah, thou shalt from oblivion pass ;
Erect thyself, thou monumental brass,
High as the serpent of thy metal made,
While nations stand secure beneath thy shade.

(*d*) No voice divine the storm allayed,
No light propitious shone ;
When, snatch'd from all effectual aid,
We perish'd, each alone.

(*e*) Whether the prime orb,
Incredible how swift had thither rolled
Diurnal, or this less voluble Earth,
By shorter flight to the east, had left
him there.

(*f*) To compass this, the triple bond he broke,
The pillars of the public safety shook,
And fitted Israel for a foreign yoke.

B

(*g*) And though the Accidents are not the same, yet the Seas were the same, in which both the Heroes wander'd, and Dido cannot be deny'd to be the Poetical Daughter of Calypso

(*h*) The Guardian Angels of Kingdoms were Machines too ponderous for him to manage, and therefore he rejected them as Dares did the whirl-bats of Eryx

(*i*) In the writings of other poets a character is too often an individual, in those of Shakespeare it is commonly a species.

(*j*) Time is, of all modes of existence, most obsequious to the imagination

(*k*) The composition refers us only to the writer, we pronounce the name of Cato, but we think on Addison.

C

II Answer *one* of the following ·—

(*a*) Describe briefly the development of thought in *Lycidas* showing how far Milton follows the classical convention of the pastoral elegy.

(*b*) "The main defect of *Comus* is that it is neither a true masque nor a good play" Discuss

(*c*) "Milton had little dramatic sense and projected his own feelings, knowledge, and aspirations into his fallen angels and into the primitive human beings of his poem." Discuss with special reference to *Paradise Lost* Book IV

III. *Either*

What poetic qualities have given permanence to *Absalom and Achitophel* in spite of its being a topical poem dealing with contemporary incidents and characters?

Or

Compare Dryden's handling of the heroic couplet with that of Pope.

IV Consider the statement that in Thomson's *Autumn* there is more of declamation and didacticism than of poetry

V. *Either*

"Where the small stream, confined in a
narrow bound,
Ran with a dull unvaried, sadd'ning sound"

How far could this description of the stream be taken also as a description of Crabbe's *The Village*?

Or

"By such examples taught, I paint the cot,
As Truth will paint it, and as Bards will not."

Show how *The Village* scrupulously keeps to this promise

VI. Write a critical appreciation of *Yardley Oak* showing how it gives a foretaste of the Romantic Revival.

D

VII Consider Hazlitt's remark that *The Complete Angler* is 'a prose poem' and is 'the finest pastoral' in the language

VIII Compare the prose style of Dryden with that of Clarendon and of Fuller.

IX. ‘But there is always an appeal open from criticism to Nature.’ Show how Johnson makes this appeal in his preface to Shakespeare? Is he consistent throughout?

X What are the ideas and sentiments in Burke’s American speeches which are of interest to modern readers and which justify his claim to political wisdom?

XI *Either*

How would you account for Gibbon’s autobiography having attained the position of a classic?

Or

Discuss the view that *Moll Flanders* is not a good specimen of the picaresque novel

XII. “Farquhar is excellent at contriving effective dramatic situations, while Congreve scores by his characters and the wit of his dialogues.”

How far is this true of *The Beaux’ Stratagem* and *The Way of The World*?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

ESSAY

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

[*N.B.—Attempt* ONE *of the following.*]

I. "Our indispensable Eighteenth Century."

II. The part played by accent in the simplification of English accidence.

III. The Arthurian Legend in English Literature.

IV. The novel as an instrument of social reform.

V. Browning's Dramatic Monologues.

VI. Shakespeare's Fools and Clowns.

ANNAMALAI UNIVERSITY

B. A. (Honours) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

CHAUCER AND OTHER MIDDLE ENGLISH TEXTS

MONDAY, 28TH MARCH] [10 A.M. TO 1 P.M

I. Translate closely but idiomatically *three* of the following passages —

(*a*) Annd te bitæche icc off þiss boc, heh wikenn alls itt semeþþ,
All to þurrhsekenn illc an ferrs, annd to þurrhlokenn offte
þatt upponn all þiss boc ne be nan word ȝæn Cristess lare,
Nan word tatt swiþe wel ne be to trowwenn annd to follȝhenn.
Witt shulenn tredenn unnderr fot annd all þwerrtut forrwerrpenn
þe dom off all þatt laþe flocc þatt iss þurrh niþ forrblendedd,
þatt tæleþþ þatt to lofenn iss þurrh niþfull modiȝnesse.
Þeȝȝ shulenn lætenn hæþeliȝ off unnkerr swinnc, lef broþerr,
Annd all þeȝȝ shulenn takenn itt onn unnitt annd onn idell,
Acc nohht þurrh skill, acc all þurrh niþ, annd all þurrh þeȝȝre sinne.
Annd unnc birrþ biddenn Godd tatt he forrȝife hemm here sinne;

Annd unnc birrþ baþe lofenn Godd off
þatt itt wass bigunnenn,
Annd þannkęnn Godd tatt itt iss brohht
till ende þurrh hiss hellpe.

Comment upon the form *fens* and upon the Norse words in (*a*)

(*b*) Grim thoucte to late þat he ran
Fro þat traytour, þat wicke man,
And þoucte, 'Wat shal me to roþe?
Wite him onlive, he wile us boþe
Heye hangen on galwetre
Betere us is of londe to fle,
And berwen boþen ure lives,
Mine children and mine wives'.
Grim solde sone al his corn,
Shep wiþ wolle, net wiþ horn,
Hors and swin, and got wiþ berd,
þe gees, þe hennes of þe yerd,—
Al he solde þat ouht douhte,
þat he evre selle moucte,
And al he to þe peni drou.
Hise ship he greyþede wel inow,
He dede it tere and ful wel þike
þat it ne doutede sond ne krike.

Give the sources of the diphthongs in (*b*)

(*c*) Of swilk ān suld ȝē matēr tāke,
Crafty þat can rīmes māke,
Of hir tō māk bāth rīm and sāng
And luve hir swēte sun amāng.
Quat bōte is tō sette traveil
On þyng þat may not avail,
þat es bot fantum o þis werd
Als ȝē hāve sēne inogh and herd?
Matēr fȳnd ȝē large and brāde,
þof rīmes fēle of hir bē māde,
Quāsā will of hyr fayrnes spell
Fīnd hē sal inogh tō tell.

Give the origin of the long vowels in (*c*).

(*d*) Syne in a mure þai enterit ār,
þat wes bāth hee and lāng and braid;
And ǭr þai half it passit had,
þai saw on sȳde thrē men cumand
Līk tō lichtmen and wāverand.
Swērdis þai had and axis als,
And āne of þāme apon his hals
A mekill būndyn weddir bāre.
þai met þē kyng and halsit þār,
And þē kyng þāme þār halsing ȝald
And askit þāme queheþir þai wald.

Point out the distinctive dialect features of (*d*).

(*e*) þa quen læi inne Eouwerwic, næs heo nævere swa sarlic;
þat wes Wenhaver þa quene, færȝest wimmonne.
Heo iherde suggen soðere worden,
Hu otte Modred flah, and hu Arður hine bibah,
Wa wes hire þere while þat heo wes on life.
Ut of Eouerwike bi nihte heo iwende,
And touward Karliun tuhte swa swiðe swa heo mahte.
þider heo brohten bi nihte of hire cnihten tweiȝe;
And me hire hafd biwefde mid ane hali rifte,
And heo wes þer munechene, karefullest wife.
þa nusten men of þere quene war heo bicumen weore,
No feole ȝēre seoððe nuste hit mon to soðe,
Whaðer heo weore on deðe, and hu heo henne wende
þa heo hire seolf weore isunken in þe watere.

Discuss the metrical form of (*e*).

II. Translate *two* of the following passages.—

(*a*) On þis gǣre fōr sē Kīng Henrī over s æt tē Lammasse And ðat ōþer dei þā hē lai an slē in scip, þā þēstrede þē dæi over al lāndes and war þē sunne swilc als it wāre thrē niht āld mōne, an sterres abūten him at middæi Wurþen men swīðe of wundred and ofdrēd, and sǣden ðat micel þīng sculd cumen hērefter, swā dide, for þat ilc gǣr warth þ kīng dēd, ðat ōþer dæi efter Sanct Andrēas massedæ on Normandi Þā wes trēsōn ā þās lāndes, for ǣvri man sōne rǣvede ōþer þe mihte. Þā nāmen his sune and his frēnd and brohten his līc tō Englelānd an bebirīeden in Rēdinge Gōd man hē wes and micel æie wes of him. Durste nān man misdōn wið ōðer on his tīme. Pais hē makede men and dēr. Wuāswā bāre his byrthen, gōld and sylvre, durste nān man sei tō him naht būte gōd.

Indicate the importance of the dialect of (*a*) in the development of Standard English.

(*b*) Ȝē, mīne lēove sustren, ne schulen habben nǭ bę̄st būte kat ǭne Ancre þet hāveð eihte þuncheð bet hūsewīf, ase Marthe was, þen ancre, ne nǭne wīse ne mei hēo bēon Mārīe mid griðfulnesse of heorte. Vor þeonne mōt hēo þenchen of þē kūes foddre, and of hēōrdemonne huire, oluhnen þēne heiward, wārīen hwon me punt hire, and ȝēlden þauh þē hermes. Wāt Crīst þis is lōdlīch þing hwon me mākeð mōne in tūne of ancre eihte. Þauh ȝif enī mōt nēde habben kū, lōke þet hēo nǭne monne ne eilīe, ne ne hermīe, ne þet hire þouht ne bēō nout þę̄ron ivestned. Ancre ne ouh nout tō habben nǭ þing þet drawe ūtward hire heorte. Nǭne cheffaré ne drīve ȝē, ancre þet is chę̄apild, hēo chę̄apeð hire soule þē chepmon of helle. Ne witc ȝē nout in ōure hūse of ōðer monnes þinges, ne eihte, ne clōðes, ne nout ne undervō ȝē þē chirche vestiments, ne þēna calis, būte ȝif strencðe hit makīe, ōðer muchel eie, vor of swuche witunge is ikumen muchel uvel oftesīðen.

With the help of this extract show the more important changes that had taken place in the Southern form of English between the date of Alfred and that of the *Ancren Riwle.*

(*c*) Forthȳ, grăciōuse lōrdes, lȳke it tō yōw tō tāke hēde in what manēre and whēre ōwre līge Lōrdes pōwēr hath bēn mysused bȳ thē forsaid Nicholus and his upbērērs, for sithen thise wrōnges bifōresaide hān bēn used as accidental or comūne braunches ōutward, it sheweth wēl thē rōte of hem is a ragged subject or stok inward, that is thē forsaid brēre or Brembre, thē whiche comūne wrōnge uses, and manȳ ōther, if it lȳke tō yow, mōwe bē shewed and wēl knowen bī an indifferent juge and mair of owre citee , thē which wyth yōwre ryghtful Lōrdeship ygraunted formōōst pryncipal remedȳe, as Goddes lawe and al rēsōun wole, that nō dōmesman stōnde tōgidre juge and partȳe, wrōnges sholle mōre ōpenlīch bē knowe and trouth dor apēre

Write a short note on the importance of the writing from which the passage is taken.

III. Translate *three* of the following passages —

(*a*) The grene knyȝt vpon grounde grayþely hym dresses,
A littel lut with þe hede, þe lere he discouereȝ,
His longe lovelych lokkeȝ he layd ouer his croun,
Let the naked nec to þe note schewe.
Gauan gripped to his ax, and gederes hit on hyȝt,
Þe kay fot on þe fold he before sette,

Let hit doun lyȝtly lyȝt on þe naked,
Þat þe scharp of þe schalk schyndered þe bones.
And schrank þurȝ þe schyire grece, and scade hit in twynne,
Þat þe bit of þe broun stel bot on þe grounde.
Þe fayre hede fro þe halce hit to þe erþe,
Þat fele hit foyned wyth her fete, þere hit forth roled.

(*b*) Forþi þis ȝol ouerȝede, and þe ȝere after,
And vche sesoun serlepes sued after oþer
After Crystenmasse com þe crabbed lentoun,
Þat fraysteȝ flesch wyth þe fysche and fode more symple,
Bot þenne þe weder of þe worlde wyth wynter hit þrepeȝ,
Colde clengeȝ adoun, cloudez vplyften,
Schyre schedeȝ þe rayn in schowreȝ ful warme,
Falleȝ vpon fayre flat, flowreȝ þere schewen,
Boþe groundez and þe greueȝ grene ar her wedeȝ,
Bryddeȝ busken to bylde, and bremlych syngen
For solace of þe softe somer þat sues þerafter bi bonk;
And blossumeȝ bolne to blowe
Bi raweȝ rych and ronk,
Þen noteȝ noble innoȝe
Ar herde in wod so wlonk.

(*c*) Nade he sayned hymself, segge, bot þrye,
Er he watȝ war in þe wod of a won in a mote,

Abof a launde, on a lawe, loken vnder boȝeȝ
Of mony borelych bole aboute bi þe diches:
A castel þe comlokest þat euer knyȝt aȝte,
Pyched on a prayere, a park al aboute,
With a pyked palays pyned ful þik,
Þat vmbeteȝe mony tre mo þen two myle.
Þat holde on þat on syde þe haþel auysed,
As hit schemered and schon þurȝ þe schyre okeȝ;
Þenne hatȝ he hendly of his helme, and heȝly he þonkeȝ
Jesu and sayn Gilyan, þat gentyle ar boþe,
Þat cortaysly had hym kydde, and his cry herkened.

(*d*) Þe lorde laches hym by þe lappe and ledeȝ hym to sytte,
And couþly hym knoweȝ and calleȝ hym his nome,
And sayde he watȝ þe welcomest wyȝe of þe worlde;
And he hym þonkked þroly, and ayþer halched oþer,
And seten soberly samen þe seruise quyle.
Þenne lyst þe lady to loke on þe knyȝt,
þenne com ho of hir closet with mony cler burdeȝ.
Ho watȝ þe fayrest in felle, of flesche and of lyre,
And of compas and colour and costes, of alle oþer,
And wener þen Wenore, as þe wyȝe Þoȝt.

(*e*) Þenne watȝ Gawan ful glad. and gomenly he laȝed:
'Now I þonk you þryuandely þurȝ alle oþer þynge,

Now acheued is my chaunce, I schal at your wylle
Dowelle, and elleȝ do quat ȝe demen’.
þenne sesed hym þe syre and set hym bysyde,
Let þe ladieȝ be fette to lyke hem þe better.
þer watȝ seme solace by hemself stille;
þe lorde let for luf loteȝ so myry,
As wyȝ þat wolde of his wyte, ne wyst quat he myȝt.
Þenne he carped to þe knyȝt, criande loude,
‘ȝe han demed to do þe dede þat I bidde,
Wyl ȝe halde þis hes here at þys oneȝ?’

IV. Translate and annotate with reference to the context any *five* of the following —

1 But wel I woot he lyed right in dede,
Of cursyng oghte ech gilty man him drede,
For curs wol slee,—right as assoillyng savith.

2. Oure conseil was nat longe for to seche,
Us thoghte it was noght worth to make it wys,
And graunted hym withouten moore avys,
And bad him seye his verdit, as hym leste.

3. But I ne kan nat bulte it to the bren,
As kan the hooly doctour Augustyn,
Or Boece, or the Bisshope Bradwardyn,
Wheither that Goddes worthy forwityng,
Streyneth me nedely for to doon a thyng.

4. O Gaufred, deere maister souerayn,
That, whan thy worthy Kyng Richard was slayn
With shot, compleynedest his deeth so soore!

5. ‘Allas, why pleynen men so in commune
Of purueiaunce of God, or of Fortune,
That yeueth hem ful ofte in many a gyse
Wel bettre than they kan hem self deuyse?’

6. And in his geere for al the world he ferde,
Nat oonly like the loueris maladye
Of Heroes, but rather like manye
Engendred of humour melancolik
Biforen in his celle fantastic.

7 Yet saugh I woodnesse laughynge in his rage,
Armed compleint, out-hees, and fiers outrage,
The careyne in the busk with throte ycorue;
A thousand slayn and nat of qualm ystorue,
The tiraunt with pray by force yraft,
The toun destroyed, ther was no thyng laft

V. Translate (Unseen).—

Þa feng eft hire feder on wið olhnunge to fondin ȝef he mahte eis weis wenden hire heorte, ant seide hire lufsumliche þet ne schulde ha nane wunne lihtliche wilnin þet he ne schulde welden, wið þet ha walde hire þonc wenden ‘Nai’, quoð þet meiden, ‘schuld ich don me to him þat is alle deovlen bitaht ant to eche deð idemet, to furwurðen wið him world abuten ende, for his wedlakes weole oðer for eni wunne? Forsoð, ich hit segge, unwurð is hit me. Ich ulle þet he hit wite wel, ant tu eke mid him, þet ich am iweddet to an þet ich ulle treowliche to halden, ant wiðuten les luvien, þe is unlich him ant alle worldlich men; ne null ich him nowðer leaven ne lihen for weole ne for wunne, for wa ne for wunne þet ȝe mahen don me’.

VI. Compare *Sir Gawain and the Green Knight* with Chaucer's *Knight's Tale* as a Romance

— *Or* —

"Chaucer's humour is everywhere." Illustrate the different ways in which this humour is displayed in the prescribed poems.

VII Answer *one* of the following —

(*a*) Write a short essay on Chaucer's treatment of the traditional Beast Fable

(*b*) Attempt a literary appreciation of *either* the *Ancren Riwle* or the *Brut*

(*c*) Give a short account of the Alliterative Revival in the Fourteenth century

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

SPECIAL PERIOD

THE AGE OF POPE AND JOHNSON I.

TUESDAY, 29TH MARCH] [10 A.M. TO 1 P.M.

[*N.B.—Answer question I and* FOUR *other questions taking* TWO *from each group.*]

I. Annotate with reference to the context *five* of the following:—

(*a*) I sit with sad civility, I read
With honest anguish, and an aching head;
And drop at last, but in unwilling ears,
This saving counsel, "keep your piece nine years."

(*b*) He, from the taste obscene reclaims our youth,
And sets the passions on the side of truth,
Forms the soft bosom with the gentlest art,
And pours each human virtue in the heart.

(*c*) Deign on the passing world to turn thine eyes,
And pause awhile from letters to be wise;
There mark what ills the scholar's life assail,
Toil, envy, want, the patron, and the jail.

(*d*) Fair laughs the morn, and soft the zephyr blows,
While proudly riding o'er the azure realm
In gallant trim the gilded vessel goes,
Youth on the prow, and pleasure at the helm;

Regardless of the sweeping whirlwind's sway,
That, hushed in grim repose, expects his evening prey.

(*e*) Mona, once hid from those who search the main,
Where thousand elfin shapes abide,
And Wight, who checks the westering tide,
For thee consenting Heaven has each bestowed
A fair attendant on her sovereign pride.

(*f*) Behold, where Dryden's less presumptuous car
Wide o'er the fields of glory bear
Two coursers of ethereal race,
With necks in thunder clothed, and long-resounding pace.

(*g*) If to some common's fenceless limits stray'd,
He drives his flocks to pick the scanty blade,
Those fenceless fields the sons of wealth divide,
And e'en the bare worn common is denied.

(*h*) Sure, if I reprehend anything in this world, it is the use of my oracular tongue, and a nice derangement of epitaphs.

(*i*) I protest when I saw him, I thought of what Hamlet says in the play.—'Hesperian curls—the front of Job himself!—an eye, like March, to threaten at command!—a station, like Harry Mercury, new'—Something kissing—on a hill—however, the similitude struck me directly.

GROUP I

II. "If Pope be not a poet, where is poetry to be found?" Either support or refute this statement with arguments and illustrations.

III. Give the substance of any *three* satirical portraits drawn by Pope. Discuss Pope's superiority in this art by comparing them with the satirical portraits drawn by other poets.

IV. Estimate the importance of Cowper *or* Thomson among the precursors of the Romantic age.

V. Write short critical appreciations of *two* of the following:—*Night Thoughts*, *The Dispensary*. *Songs of Experience*; *The Shepherd's Week*, *Essay On Man*, *Retaliation*, *The School For Scandal.*

VI. "The business of a poet is to examine, not the individual, but the species; to remark general properties and large appearances." (Johnson) How far do the poets of this age conform to this principle of poetry? Do you agree with this view?

GROUP II

VII. What do you know of the literary forgeries of this century? Estimate the influence of these on the poetry of the succeeding age

VIII The odes of Gray have been criticised in various ways. Cowper called them sublime; Coleridge found them artificial; Wordsworth thought them a storehouse of gaudy and inane phraseology; Arnold considered them highly artistic. Give your reasons for such a variety of opinions.

IX. What are the characteristics of the sentimental comedy? How were the comedies of Sheridan and Goldsmith a protest against the sentimental drama?

X. Consider the merits and demerits of *Cato* as an 'acting' drama. How do you account for the popularity of *Cato* on the eighteenth century stage?

XI. "The Eighteenth century was the golden age of English Letter-writing." Account for the popularity and the importance of this literary form in this century.

ANNAMALAI UNIVERSITY

B A. (Hons.) Degree Examination -Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

MODERN LITERATURE III

WEDNESDAY, 30TH MARCH] [10 A M TO 1 P.M.

[*N.B —Attempt Question I and* FOUR *other questions not omitting any of the groups.*]

I Annotate with reference to the context *five* of the following passages —

(*a*) But we must be on our guard against the Wordsworthians, if we want to secure for Wordsworth his due rank as a poet.

(*b*) For the votary misled by a personal estimate of Shelley, as so many of us have been, are, and will be,—of that beautiful spirit building his many coloured haze of words and images 'Pinnacled dim in the intense inane'—no contact can be wholesomer than the contact with Burns at his archest and soundest.

(*c*) Sylvan historian, who canst thus express
A flowery tale more sweetly than our rhyme.

(*d*) Ah, but a man's reach should exceed his grasp,
Or what's a heaven for?

(*e*) how they fled,
When like Apollo, from his golden bow
The Pythian of the age one arrow sped
And smiled!—The spoilers tempt no second blow,
They fawn on the proud feet that spurn them lying low

(*f*) Thou hadst *one* aim, *one* business,
one desire!
Else wert thou long since number'd
with the dead—
Else hadst thou spent, like other men,
thy fire!

(*g*) Ay, in the very temple of Delight
Veil'd Melancholy has her sovran shrine,
Though seen of none save him whose
strenuous tongue
Can burst joy's grape against his palate
fine.

(*i*) The brain of a true Caledonian (if I am not mistaken) is constituted upon quite a different plan. His Minerva is born in panoply.

(*j*) Come back into memory, like as thou wert in the dayspring of thy fancies, with hope like a fiery column before thee—the dark pillar not yet turned—Samuel Taylor Coleridge—Logician, Metaphysician, Bard!

GROUP A

II "Nature not only gave him the matter for his poem, but wrote his poem for him. He has no style' Discuss this remark of Arnold on Wordsworth with reference to Wordsworth's poetry.

III Examine the substance of *In Memoriam* and indicate what aspects of Victorian thought are revealed in the poem

IV. Browning has been called the greatest poet of love in English Literature. Justify this statement by comparing his love poems with those of any *two* great love poets.

V "The 'moral edification' of Poetry was ever the concern of those who have a defective capacity for enjoying poetry" Discuss with special reference to the poetry of the Pre-Raphaelites

GROUP B

VI Reconstruct a biography of Charles Lamb confining yourself to the *Essays of Elia.*

VII. Consider either Carlyle or Arnold as a thinker, and estimate the influence of one of them as a corrective to the Victorian age

— *Or* —

Attempt an appreciation of Arnold's critical methods.

VIII. What are the merits and defects of the aesthetic school of critics? Illustrate from your study of Pater.

GROUP C

IX. "Poor wounded name, my bosom as a bed shall lodge thee." Hardy chose this quotation from Shakespeare for the fly-leaf of his *Tess of the D'Urbervilles.* Show how these lines reveal Hardy's attitude towards his heroine.

X Write critical appreciations of any *two* of the following characters —Major Dobbin; Mark Tapley; Irene Forsyte, Catharine Moreland .

XI Describe the clash of ideals between the Victorian age and the modern age as represented by Galsworthy in his *Forsyte Saga*

XII How would you answer the criticism that Dickens's characters are overdrawn and that you do not meet with Pecksniffs and Sarah Gamps in real life?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH IV

ENGLISH LANGUAGE AND LITERATURE

SPECIAL PERIOD

THE AGE OF POPE AND JOHNSON II

THURSDAY, 31ST MARCH] [10 A.M. TO 1 P.M.

[*N.B.—Answer Question* I *and* FOUR *other questions, choosing* TWO *from Group A and* TWO *from Group B.*]

I. Annotate any *five* of the following passages :—

(*a*) Now I have been considering of this same will here before us, and I cannot reckon it to be complete for want of such a codicil: I will therefore fasten one in its proper place very dexterously: I have had it by me some time; it was written by a dog-keeper of my grandfather's and talks a great deal (as good luck would have it) of this very flame-coloured satin.

(*b*) A third invention was the erection of a whispering-office for the public good and ease of all such as are hypochondriacal or troubled with the colic.

(*c*) But when it is admitted that the faculties are suppressed by a cross wind, or a cloudy sky, the day is given up without resistance; for who can contend with the course of Nature?

(*d*) He makes, like almost all other poets, very frequent use of mythology, and sometimes connects religion and fable too closely without distinction.

(*e*) The grove of Daphne no longer flourished; but the Syrian air was still impregnated with the same vices.

VIII. *Either*—In what respects does *Tom Jones* make a great advance over *Clarissa Harlowe* in the art of the novel?

Or—Do you agree with the remark that *Tom Jones* is complicated and rich in surprises, but that probability is never violated?

IX. How far is it true to say that *Humphrey Clinker* is a novel of 'humours'?

X. Describe the manner in which any *two* of the following characters is delineated, and show how they are characteristic of their respective authors.—

Clarissa Harlowe, Sophia Western, and Tabitha Bramble.

XI. How do *The Sentimental Journey* and *The Vicar of Wakefield* stand in relation to the sentimental movement in the literature of the eighteenth century?

XII. Estimate the work of the novelists of the eighteenth century in perfecting the novel as a literary form, stating the different types of fiction brought into vogue by them.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

PRESCRIBED TEXT-BOOKS IN POETRY I

MONDAY, 21ST MARCH] [10 A.M. TO 1 P M

[கல்லாடம், புறநானூறு, கலித்தொகை, சீவகசிந்தாமணி, பெரிய புராணம், கோயில் நான்மணி மாலை]

Marks

I. (a) கல்லாடம் சங்ககாலத்துப் புலவரான கல்லாடரால் இயற்றப்பட்டதன்றென்பதை ஆதாரத்துடன் தெரிவிக்க. 10

(b) நூல்களின் முதன் மொழியை மங்கலச்சொல்லாக அமைக்கும் வழக்கம் கல்லாடர் காலத்துக்கு முன்பே உண்டென்பது எதனால் புலப்படுகின்றது? 8

(c) "ஊமன்கன வென வாக்கிய கூடற் பெருமான்". ஆக்கப்பட்டது யாது? 2

(d) "நன்றி, செய்குநர்ப் பிழைத்தோர்க் குயில வென்னுங், குன்றுவாய்மை நின்று நிலை காட்டித் தங்குவன" தங்குவன எவை? அவை காட்டியவாறு எங்ஙனம்? 10

II. (a) புறநானூற்றுச் செய்யுட்களுக்கு இயல்பாகவே அமைக்கப்பட்டுள்ள திணைகளும் துறைகளும் எந்த நூலைப் பின்பற்றியவை? 4

(b) பூவைநிலை, உடனிலை இத்துறைகளுக்கு இலக்கணமெழுதுக. 10

(c) "கூற்றுக் கண்ணோடிய வெருவரு பறந்தலை", "எழுவர் நல்வலங் கடந்தோய்" இவ்வடிகளிற் குறிக்கப்பட்ட வரலாற்றை விளக்குக. 8

(d) "அறுமருப் பெழிற்கலை புலிப்பாற் பட்டெனச், சிறுமறி தழீஇய தெறிநடை மடப்பிணை, வேளை வெண்பூக் கறிக்கும், ஆளிலத்த மாகிய காடே". இதனாற் குறிக்கப்படும் பொருளை எழுதுக. 8

(e) "வேம்பினொண்டளிர், நெடுங்கொடி யுழிஞைப், பவரொடு மிலைந்து". இதனாற் சுட்டப் பட்ட புறத்திணை வழக்கம் என்ன? 6

III (a) "தோணெகிழ் புறத்த துயராற் றணி தந்தோர், நாணின்மை செய்தே னறுநுதால்". நாணின்மை யென்றது எதனை? அஃது எந்த விதியினால் அமைத்துக்கொள்ளப்படும்? 6

(b) "உறுபுலி யுரு வேய்ப்பப் பூத்த வேங்கையைக், கறுவுகொண் டதன்முதற் குத்திய மதயானை, நீடிரு விடரகஞ் சிலம்பக் கூய்த்தன், கோடு புய்க்கல்லா துழக்கு நாட": இதற்குரிய உள்ளுறை யுவமப்பொருளை யெழுதுக. 8

(c) "பணைகயினேய". பணையென்றது இங்கே எதனை? 3

(d) "வெறுப்பினால் வேண்டுருவங் கொண்டதோர் கூற்றங் கொல்" இதற்கு நச்சினார்க்கினியர் எழுதிய உரையைத் தெரிவிக்க. 8

(e) "வார [illegible]த்தம் பெயர்த்தல்" இதனால் தெரிவிக்கப்படும் குறிப்புப் பொருள் யாது? 5

IV (a) சீவகனுக்குத் துன்பம் நேர்ந்ததென்பதைச் சுதஞ்சணன் என்ன குறிப்பால் அறிந்தனன்? 5

(b) சைன மதக் கொள்கைகளில் இரண்டைக் குணமாலையார் இலம்பகத்திலிருந்து எடுத்துக் காட்டுக. 8

(c) "மழைவள்ளல்", "ஆள்வழக்கற்ற", "மாசை மாக்கடன் மன்னவ[illegible]", "அழல் செய்தடத்துண் மலர்ந்த வலங்கன் மாலை": இவற்றிற்குக் குறிப்புரை எழுதுக. 12

(d) "தேன்றுளித்த தொண் மது வார் மணநாறி" தேனுக்கும் மதுவிற்குமுள்ள வேறுபாடென்ன? 6

(e) "அணைப் ணீரூறமிர்தம்", "ஐம்பத வமிர்தம்". இவற்றிற்குப் பொருள் எழுதுக. 6

(f) மன்னுயிரெல்லா நின்னருகம்மே" இம்மேற்கோள் எதற்காகக் காட்டப்பட்டது? 4

V. (a) சுந்தரமூர்த்தி நாயனாருக்குப் படியளந்து வழிபட்டவர் யாவர்? 4

(b) திருப்புகலூரில் அவர் பொன் பெறுதலை விரும்புதற்குக் காரணம் யாது? 6

(c) "வாசியறிந்து காசளிக்க வல்ல மிழலை வாணர்" இதிற்காட்டப்பட்டுள்ள சரித்திரம் யாது? 8

(d) நட்டக்காவணம், சுடுமட்பலகை, திருத்துருத்தி, நாட்டியத்தான்குடி இவற்றுள் மூன்று காரணப் பெயர்களாதலைப் புலப்படுத்துக. 8

(e) கூடலையாற்றூருக்குச் செல்லும் வழியில் நிகழ்ந்த அற்புதச்செயல் என்ன? 8

VI. (a) சிவபெருமானுக்குரிய தசாங்கங்கள் யாவை? 10

(b) காயச்சிறைக் கலத்தின் செலவு எவ்வாறு வருணிக்கப்பட்டுள்ளது? 6

(c) "நன்றென்ப சிலவே தீதென்ப சிலவே, ஒன்றினும் படாதன சிலவே." இவற்றுள் மூன்றாவது வேறு எந்தப் பெயரால் கூறப்படும்? 3

(d) "அம்பலத்தே, வந்திப்பார் வேண்டாத வாழ்வு" எது? 4

(e) பட்டினத்துப்பிள்ளையாரால் பாராட்டப்பெற்ற நாயன்மார்கள் யாவர்? 6

200

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

TAMIL LANGUAGE & LITERATURE

HISTORY OF THE TAMIL LANGUAGE

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

Answer any EIGHT *questions.*

[*Total marks 200. Each question carries 25 marks.*]

I. Mention some of the peculiarities of the Tamil Alphabet. Classify its vowels according to their place of articulation and examine how far the constituent sounds of the Diphthongs in Tamil agree with the corresponding sounds in Sanskrit.

II. Write a historical sketch of the development of the Tamil pronouns of the Second Person.

III. Trace the historical development in the conception of the functions of தன்வினை and பிறவினை by the Tamil Grammarians and discuss Dr. Caldwell's view that these verbs correspond to the reflexive and transitive voices of Sanskrit.

IV. Discuss the accuracy of the following with reasons:—

(1) "There is no such thing as absolutely original invention of a root or word."

(2) "The Tamil future was originally a sort of a verbal noun."

(3) "Originally the word தமிழ் denoted the land and not the language."

[T. O.

V. (*a*) Write short notes on any *four* of the following :—வியங்கோள்வினை, இடைச்சொல், Conjugated nouns; Euphonic nunnation; Harmonic sequence

(*b*) With reasons derive the following :—
கடுகு, பட்டணம், பிற

VI. (*a*) Mention the various ways in which Negative voice is expressed in Tamil.

(*b*) Trace the origin of the Negative particle அ.

VII. (*a*) Discuss the rationale of reduplication in Tamil.

(*b*) "The primitive radical forms of the Tamil numerals will be found to be those of the numeral adjectives."

Illustrate this by tracing the origin of the Tamil numerals இரண்டு, நான்கு and ஆறு.

VIII. How are dialects formed from a language? Illustrate your answer by reference to any dialect from செந்தமிழ்

IX. Describe some of the motives which lead to such devices as narrowing, widening or shifting of meanings of words in a language with special reference to Tamil.

X. What are the methods in which Tamil neuter nouns and third personal pronouns are pluralised?

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination, 1938

TAMIL—COMPOSITION AND PRESCRIBED TEXT-BOOKS IN PROSE

WEDNESDAY, 23RD MARCH] [10 A.M. TO 1 P.M.

[குறிப்பு:—முதலிரு கேள்விகளில் எந்த இரண்டு பிரிவிற்கேனும் விடை போதும்.]

Marks

I. (அ) மண்ணியல் சிறுதேர் எனப் பெயர் போந்த காரணத்தைப் புலப்படுத்துக.

(ஆ) இந்நூற் கதாபாத்திரங்களுள் விடன் என்பான் வசந்தசேனையின்பால் உண்மையன்பு காட்டி அவளைக் காக்க முயல்பவன், அவனே சகாரனிடம் "வசந்தசேனை தங்களைக் கூடுதற்கு வந்திருக்கின்றாள்" என்பது முரண்படாமைக்கு நுமது சமாதானம் யாது?

(இ) தூதையின் மனப்பான்மை இத்தகையதென்பதைக் கதையிலிருந்து விளக்கிக்காட்டுக.

(ஈ) வசந்தசேனையை மாதவிக்கு ஒப்பிடுங்கால் உள்ளவாம் ஒற்றுமை வேற்றுமைகளை ஆராய்க. 40

II. (அ) பட்டினப்பாலை ஆராய்ச்சி அந்நூலாசிரியரால் எங்ஙனம் ஆராயப்படுகிறது?

(ஆ) உருத்திரங்கண்ணனாரின் சமயமும் பெயர்க்காரணமும்பற்றி அவ்வாசிரியர் ஆராய்ந்ததில் நுமது கருத்து யாது? காரணத்தோடு விடைதருக.

(இ) மாட்டு என்னும் பொருள்கோள் பற்றி ஆராய்ச்சியாளர் கொள்கை யாது?

(ஈ) "காலின் வந்த கருங்கறி மூடையும்": "வேறுபல் பூளையொ டுழிஞை சூடி"—இவ்வடிகட்கு

[T. O.

ஆராய்ச்சியாளர் காட்டும் உரை யாது? அஃது எங்ஙனம் பொருந்தும்? 40

III. (அ) நல்லிசைப் புலமை மெல்லியலாருள் "நளிஇரும் பொய்கையுந் தீயுமோ ரற்றே" என்று கூறியவர் யாவர்? இது கூற நேர்ந்த வரலாறு யாது? அவர் 'உயவற்பெண்டிர்' நிலைமையைக் கூறுமாறு யாங்ஙனம்?

— அல்லது —

இக்காலத்துப் படிப்பில் முன்னேற்றம் அடையாத குலங்களிற் பிறந்த பெண்டிரும் முற்காலத்துப் பெரும்புலமை படைத்திருந்தனர் என்றற்கு இருவேறு சான்று காட்டி அவர்தம் புலமைத்திறனையும் புலப்படுத்துக.

(ஆ) தயரதனுக்கு எய்தவிருந்த பழி பாவங்களைக் கைகேயி தன்மேற்கொள்ள முன்வந்தவள் என்ற கொள்கை எங்ஙனங் காரணங்களுடன் நாட்டப்படுகிறது?

— அல்லது —

ஒருமகற்கெனவே கொடுத்த பேரரசு அவன் குலக்கோமைந்தர் தமக்கும், அந்தத் தம்பிக்கும் ஆம் பிறர்க்காகுமோ என்றாள்—கோடிட்ட சொற்கள் ஆசிரியரின் கொள்கையை நிறுவப் பயன்படுமாற்றை நன்கு விளக்குக. 40

IV. (அ) இந்தி மொழியைக் கட்டாய பாடமாக வற்புறுத்தல் தமிழ்மொழிக்கு ஆக்கம் பயக்குமா?

(ஆ) திருவள்ளுவரின் அரசியலறிவு.

(இ) விஞ்ஞானக் கலை (Science)யின் அபிவிருத்தி மக்கள் வாழ்க்கையிற் பயன்படுமாறு.

இவற்றுள் இரண்டினைத் தலைப்பிட்டு ஒவ்வொரு கட்டுரை வரைக. ஒவ்வொன்றும் மூன்று பக்கங்களின் மிகல் வேண்டா. 80

ANNAMALAI UNIVERSITY

B A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

HISTORY OF THE TAMIL PEOPLE AND SELECT INSCRIPTIONS

THURSDAY, 24TH MARCH] [10 A.M. TO 1 P.M.

I. Comment on *any four* of the following:—

(*a*) On the eighty-eighth day of the ninth year of (this) king Parakēsarivarman, who was pleased to be seated together with (his queen) Bhuvanamulududaiyāḷ on the throne of heroes (which consisted of) pure gold, *alias* the emperor of the three worlds, Śrī-Kulōthuṅga-śōḷadēva, who was pleased to take Madurai,—the following order was issued (by the king) and received.

In order to lay out a flower-garden (which shall furnish) the garlands to be placed on (the image of) Āludaiyār, and in order to (provide) tax-free (land) for the maintenance of the flower-garden, (*viz.*) for (supplying) clothing and food to the two attendants who work in this flower-garden,—Tiruvēgambam-Udaiyāṉ Tiruvanantīśvaram-Uḍaiyāṉ *alias* Kēraḷarājan, a native of Perunallūr in Kīlvēṅgai-nāḍu, (a subdivision) of Rājarāja-valanāḍu, purchased (the following) land from several persons in the name of another, (viz.) in the name of Ulaichcharanaṉ Vaḍugaṉ Tirunaṭṭamāḍi of Perumbarṟappuliyūr.

(Inscription of Kulottunga III)

(*b*) In the second year of (the reign of) king Rājakēsarivarman, we, the great merchants (nagarattōm) of Kumaramārtāṇḍapuram in Tiraimūr-nāḍu on the southern bank (of the Kāvēri river), assigned and gave, with the consent of the guild, the income of every alternate year from the collection (vārāvaigal) which we, the merchants, are receiving on account of the flower-gardens on the eastern and western sides of this paḷḷi (temple), for the benefit of the repairs (Pudukkuppuram) to the sacred enclosure called Maunakumaramārtāṇdaṉ and the gōpura of ours (*i.e.* built by us) in (the temple) Miḷāḍuḍaiyārpaḷḷi in this village.

(Inscription of Aditya I)

(*c*) The first son of the goddess of the (lotus) flower (*i e.* Lakshmī) called Vānavanmahādēvi, was he the king of the Mīṉavar, (*i e* the Pānḍyas) Rājasiṁha Vikaṭavāḍavaṉ who having himself borne (easily) by the strength of his broad shoulders, the great burden of the circle of the earth which the lord of serpents (*i.e.* Śēsha) bears with much difficulty by his thousand heads, became distinguished as "the strong-armed that relieved the serpent lord of (the pain of) carrying the earth"; who at Ulappinimaṅgalam pierced the bodies of the enemies that attacked (him), and gave (their) blood, the superior (position) of becoming the scented cosmetics of the goddess Earth, who sounded his drum when the king of Tañjai (country) (full of) water flowing from sluices, ran away surrendering his arms, at Naippūr which was filled with mountain-like battalions; who commenced his battle at the big city of Koḍumbai where the assembled (enemy's) forces, vast like the roaring ocean, dispersed suffering affliction; whose looks caused (the town of) Vañji with walls surrounded on all sides by flower-gardens (and situated) on the northern bank of the Kāvēri (Ponṉi) abounding in water to be consigned to flames, and whose eyes which became red (with anger) made to dance the headless bodies of the heroes that opposed him; who like Kumāra (Skanda) of the high cockflag, swelled with rage and displayed the strength of (his) galloping steeds by destroying in the battle at the beautiful and well-watered town of Nāval the crowds of elephants, horses and footmen of the lord of the southern Tañjai (country). (His) victorious flag reaching the sky, his sceptre wielded (right) up to the ends of quarters, acquiring the bridled horse, the chief mountain and the blood-red garland, was enjoying the pleasure of Mahēndra, with his prosperous sons worshipping at his feet, the king Vikaṭavāḍava, the lord of Prosperity, who marked the chief of mountains with his fish emblem, the crest-jewel of kings, this lord of the south (Teṉṉaṉ), of many brilliant virtues having founded with pleasure in every direction numberless *brahmadīyas*, numberless *dēvadānas*, and numberless *pallichchandam*.

(Larger Sinnamanur Plates)

(*d*) .... "In the 36th year of (the reign of) king Parakēsarivarman, who took Madiri (Madura) and Īḷam (Ceylon), the three thousand Kādi of Puravu accruing as produce from the estate (kāni) of Śaṅgap-pāḍikīlaṉ in this (village of) Śiṟṟiyārrūr, was (also) entered in the accounts as a tax-free dēvadāna (in favour of) the same (temple of) Mahādēva at Tirumālpēru".

"(Now), the managers of the temple (dēvakanmigaḷ), the men in charge of (its) central shrine (unnāḷigaiy-uḍaiyār) and all the Māhēśvaras come and complain that the members of the assembly of Puduppākkam have been misappropriating and enjoying this kāṉi of Śaṅgappāḍikilāṉ bestowed (on the temple) in the above said manner, without paying the taxes to the god."

(Inscription of Ko-non-immaikondan)

(*e*) In the fourth year of (the reign of) king Parakēsarivarman who took the head of the Pāṇḍya (king), the officer (adhikāri) Śiṟṟiṅgaṉuḍaiyāṉ kōyil Mayilai (*alias*) Parāntaka Mūvēndavēḷāṉ, who supervises the temple affairs (Śrīkārya), the members of the assembly of Tiraimūr, the merchants (nagarattār) and the temple servants (dēvakanmi) of Tiruviḍaimarudil, having assembled in the theatre-hall (nāṭaka-śālai), ordered that provision may be made for performing the (dance known as) Āriyakkūttu in the presence of the lord of the sacred Mūlasthāna (temple) at Tiruviḍaimarudil, to Kīrttimaṟaikkāḍaṉ *alias* Tiruvēḷai-Araichchākkai.

(Inscription of Aditya Karikala)

(*f*) In the ninth year (of the reign) of this king Parakēsarivarman, *alias* the emperor of the three worlds, Śrī Vikrama-śōladēva.

When on the day of Tirukkēṭṭai (Jyēshtha), on which were born the saint Pūdattālvār and the saint Poygaiyālvār, who were pleased to compose hymns in praise of the god (Ālvār) of Tiruvattiyūr in Eyilnādu, (a subdivision) of Eyirkōṭṭam, (a district) of Jayaṅgonda-śōla-maṇḍalam, (the god) Aruḷāḷa-Perumāl is carried out, is bathed eighty-one times, and receives great offerings,—one *padakku* and two nāli of paddy (are required) for thirty-six pots of sprouts to be offered at the bath, *viz.* one *uri* of paddy to be spread underneath each pot, ...

(Inscription of Vikramachola)

II Write what you know of the geographical basis of the ancient culture of the Tamils.

— *Or* —

Give an account of the ancient culture of the Tamils before their contact with the Aryans.

III Examine the origin and rise of the Pallavas. Briefly indicate their contribution to art and architecture.

IV. Give a short account of Tamil India under the Vijayanagara Emperors.

V. Discuss *any two* of the following:—

(*a*) Karikāla and Trilocana Pallava.

(*b*) Udiyan of the Big Feed.

(*c*) The chronology of Māṟavarman Kulaśēkhara.

(*d*) Malik Kafur's invasion of the Pandyan kingdom.

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

PRESCRIBED TEXT-BOOKS ON GRAMMAR, PROSODY AND POETICS I

FRIDAY, 25TH MARCH] [10 A.M. TO 1 P.M.

[தொல்காப்பியம் அகத்திணை, புறத்திணை, மெய்ப்பாடு, உவமம், பரிபாடல் மணிமேகலை, தொல்காப்பியப்பாயிரவிருத்தி, சூத்திரவிருத்தி.]

(ஒவ்வொரு வினாவிலும் நந்நான்கு உட்பிரிவுகட்கு விடை எழுதுக.)

Marks

I 1. வீரம், காட்டம் என்னும் இரண்டனுட் டலைமையது இஃதென்று தொல்காப்பியனார் கருத்தால் விளக்கிக் காட்டுக. 10

2. பாசறையுளிருந்து தலைவன் தலைவியை நினைதல் வழுவாதல் யாங்ஙனம்? வழுவின்றாதல் யாங்ஙனம்? உதாரணங்காட்டி விளக்குக. 10

3. “பொருளொடு புணர்ந்த பக்கத்தானும்” என்புழிக் “கேள்விகேட்டுப் படிவ மொடியாது” என்னும் பதிற்றுப்பத்தும் அது என்று நச்சினார்க்கினியர் கூறினார். இப்பாட்டுப் பொருளொடு புணர்ந்த பக்கத்ததாதல் இதுபற்றியென்று விளங்க எழுதுக. 10

4. “அன்ன வென் கிளவி பிறவொடுஞ் சிவணும்” ஈண்டுப் பிற என்பன இவையென்று காட்டிச் சிவணுதற்கு உதாரணம் எழுதுக. 10

5. “கங்குலும் பகலுங் கலந்துக வொன்றி
வன்புறை சொல்லி நீத்தோர்
அன்புறு செய்தி யுடையரோ
மற்றே” 10

இஃது இன்னதிணையென்று காரணத்துடன் எழுதுக.

II. 1. கொடுத்தலெய்திய கொடைமைக்கும், இடையில் வண் புகழ்க்கொடைமைக்கும் உள்ள வேற்றுமைகளைத் தெளிய எழுதுக. 10

2. முல்லைநிலத்தில் பாலைத்திணை வந்ததற்கு இலக்கணம் எழுதுக. 10

3. உள்ளதுவர்த்தல், இல்லது காய்தல் இரண்டையும் விளக்கி உதாரணங்காட்டுக. 10

4. "இமயமுந் துளக்கும் பண்பினை
துணையில ரளியர் பெண்டிரிஃ
[தெவனோ"

"கிண்கிணி களைந்தகா லொண்கழல்
[தொட்டு" 10

இவ்விரண்டுள் ஒன்று இன்ன சுவையுடையது என்று காரணத்துடன் எழுதுக.

5. 'கண்ண னவனிவன் மாறன்' இஃது இன்ன உவமங்கருதியது என்று விளக்கிக்காட்டுக. 10

III. 1. "கையூழ் தடுமாற்ற நன்று" என்று கற்புடைமகளிர்க்கு கடவுள்வழிபாடு கூறிய காரணத்தை எழுதுக. 5

2. சங்ககாலத்துத் திருக்கோயில் வழிபாட்டில் வேதத்தோடு புலவர் பாடிய இயற்பாட்டுக்களும் வழங்கப்பட்டன என்பதற்குப் பரிபாடலினின்று மேற்கோள் காட்டுக. 5

3. சங்ககாலத்தில் சோதிட அறிவுடைமைக்கு ஆதாரம் காட்டி விளக்குக. 5

4. பரிபாடற்காலத்துத் தமிழ்நாட்டின் சமயக் கொள்கைகளைப்பற்றி நீவிரறிந்தவாறு சுருக்கி எழுதுக. 5

5. "பொறிவரிக்கொட்டையொடு புகழ் வரம்பிகந்தோய்" இவ்வடியில் முருகக்கடவுள் பெருமையை விளக்கிக்காட்டுக. 5

IV. 1. அக்கபாதன், கணாதன், சைமினி இவர் உடன்பட்ட அளவைகள் இவை இவையென எழுதுக. 5

2. பூதவாதியின் கொள்கையைப்பற்றி நீவிரறிந்தவாறு சுருக்கி எழுதுக. 5

3. அபாவவளவை இன்னதென்று உதாரணத்துடன் எழுதுக. 5

4. ஒருபொருள் ஒரே கணத்துத் தோற்றம், நிலை, கேடு என்னும் மூன்றையும் அடையும் என்று கூறுபவர் யாவர்? இவரிங்ஙனம் கூறுதல் எதுபற்றி? 5

5. பிரமாணாபாசத்துக் கூறப்பட்ட 'நினைப்பு' என்பது இன்னதென விளக்குக. 5

V. 1. தொல்காப்பியனார்க்கு வடநூலறிவுறுத்திய ஆசிரியர் அகத்தியனார் என்பதற்குச் சிவஞானமுனிவர் கூறிய காரணங்கள் யாவை? 10

2. குற்றியலிகரமும், குற்றியலுகரமும் ஆய்தம்போல வேறெழுத்தேயாவன என்று சிவஞானமுனிவர் கருத்தால் விளக்கிக்காட்டுக. 10

3. சிவஞானமுனிவர் சேனாவரையர் கொள்கையை மறுத்த ஏதாவது ஓரிடத்தை எடுத்து விளக்கிக்காட்டி அதன்கண்ணும் உடன்பாட்டின் காரணம் காட்டி எழுதுக. 10

4. யார் என்பது இன்ன இடத்திற் பலரறிசொல், இன்ன இடத்தில் வினைக்குறிப்பு என்றும், 'அநதாபபாவிதணிசசு' இன்னதென்றும் உதாரணங்காட்டி விளக்குக. 10

5. 'வைகுறு விடியல் என்னும் வினைத்தொகையை உம்மைத்தொகையாக்கியும் ஏற்பாட்டைப் பின்பகலாக்கியும் கூறுவார் கூற்று எங்ஙனம்? அதைச் சிவஞானமுனிவர் எவ்வாறு மறுத்தனர்? 10

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination, 1938

BRANCH VI

TAMIL LANGUAGE & LITERATURE

HISTORY OF THE TAMIL LITERATURE

SATURDAY, 26TH MARCH] [10 A. M. TO 1 P.M.

Marks

I. Write a short sketch about the scheme and scope of Tholkappiam and account for some of the differences of its commentaries. 20

II. Who were the poets that lived in the time of Thalaialankanathu cheru venra Nedun Cheliyan? Write short notes on any two of them. 20

III. Some say there was only one Auvaiyar and some others say there were more than one. What are the arguments given by them for their respective conclusions? 20

IV. 1. How is the date of Naladiyar fixed with the help of the word 'Muttaraiyar' found in that work?

2. Who was the teacher of Niramba Alakia Desikar? Who were his contemporaries? Write short notes about them. 30

V. 1. Write short notes on any two of the following:—Perundevanar Bharatham, Thagadur Yattirai, Sripuranam.

[T. O.

2. Describe any four kinds of Yal (யாழ்) or any four kinds of Mulavu (முழவு) mentioned in Tamil literature. 30

VI. Who were the patrons of the following poets?—Pavanandi Pugalendi, Poyyamoliyar, Thivagaramunivar Also write shortly how they have praised the benevolence of their patrons 20

VII. Discuss the age of Chilapathikaram. 20

VIII Estimate the place and value of Thirumular's work in the South Indian system of philosophy. 20

IX Discuss the bearing of Pattinapalai or Porunarurattupadai on the history of Tamil Literature 20

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

TAMIL LANGUAGE & LITERATURE

PRESCRIBED TEXT-BOOKS ON GRAMMAR, PROSODY AND POETICS II

MONDAY, 28TH MARCH] [10 A M. TO 1 P.M.

[நன்னூல் விருத்தி, யாப்பருங்கலக் காரிகை, தண்டியலங்காரம், திருக்குறள், சிந்தாமணி]

Marks

I. (*a*) நடந்தனன், நடவான் — இவற்றினுள்ள பகுபதவுறுப்புக்களைப் பிரித்துப் புணர்த்திக் காட்டுக. 12

(*b*) வான்சிறப்பு, நீத்தார்பெருமை, இன்னாசெய்யாமை, தெரிந்து தெளிதல்—இவற்றுள் இரண்டிற்குப் புணர்ச்சிவிதி கூறுக. 12

(*c*) அன்மொழித் தொகைக்கும், இருபெயரொட்டாகு பெயர்க்குமுள்ள வேற்றுமையைப் புலப்படுத்துக. 12

(*d*) 'செய்யும்' என்னும் எச்சமும், முற்றும் எவ்வெவ்வாறு திரிந்து வருதலுண்டு? 12

(*e*) "சொற்றிரியினும் பொருடிரியா வினைக்குறை"—இதற்கு ஓருதாரணந்தந்து விளக்குக. 12

II. (*a*) நான்கு பாவிற்கும் அடியின் சிற்றெல்லையையும், அவற்றுள் வஞ்சிப்பாவின் அடிச்சிறுமை பற்றிய ஒருசாராசிரியரின் வேறுபட்ட கருத்தையும் தெரிவிக்க. 12

(*b*) மருட் பாவின் இலக்கணம் யாது? அஃது எவ்வெப்பொருள்பற்றிப் பாடப்படும்? 12

(*c*) இனவெதுகை, ஆசெதுகை என்பவற்றிற்கு உதாரணந்தருக. 12

(*d*) பாவினங்களில் ஒரு பொருள்மேல் மூன்றடுக்கி வருவன யாவை? 12

III. (*a*) உண்மையுவமை, அவநுதியுருவகம்—இவற்றின் பேதத்தை விளக்குக. 12

[T. O.

(b) மாறுபடு புகழ்நிலை, புகழாப் புகழ்ச்சி —இவ்வணிகளின் இலக்கணங்களைத் தெரிவிக்க. 12

(c) இவை என்ன அணிகள்?—

1. வெண்ணீர்மை தாங்குவன முத்தே வெறியவாய்க்
கண்ணீர்மை சோர்வ கடிபொழிலே.

2. காலையு மாலையுங் கைகூப்பிக் காறு முதால
மேலை வினையெல்லாங் கீழவாம். 12

(d) திரிபதிசயம், தொழிற்குறை விசேடம், புகழொப்புமைக்கூட்டம்—இவற்றுள் ஒன்றற்கு உதாரணந் தருக. 12

IV. (a) "இருள்சே ரிருவினையுஞ் சேரா", "இருணீங்கி யின்பம் பயக்கும்"—ஈரிடத்தும் இருள் என்பதனாற் குறிக்கப்படுவன யாவை? 'இருவினை' என நல்வினையையும் உடப்படுத்திக் கூறியது என்னை? 8

(b) "ஓர்த்துள்ள முள்ள துணரின்"—முதற்பொருளையுணர்தற்குரிய உபாயங்களில் இதிற் கூறப்பட்டது யாது? 6

(c) பிறப்பிற்கு முதற்காரணமும், வீட்டிற்கு நிமித்த காரணமும் முறையே யாவை? 6

(d) "சார்தரா சார்தரு நோய்," "மூன்றினுமங் கெடக்கெடு நோய்"—இருவழியுங் குறிக்கப்பட்ட நோய் இன்னவெனத் தெரிவிக்க.

— Or —

"வையத்தின் வான நணிய துடைத்து"—இதற்குப் பரிமேலழகர் கூறிய விளக்கவுரையை வரைக. 6

V. (a) "பாலனைய சிந்தை சுடரப் படர் செய் காதி நான்குமுடனே யரிந்து நான்மை வரம்பாகி"—பாலனைய சிந்தை, நான்மை என்பவற்றை விளக்குக. 6

(b) தீவினை, நல்வினை என்னுங் குழவிகட்கு முறையே செவிலிகளாகக் கூறப்பட்டன யாவை? 6

(c) மணியுயிர், வெள்ளியுயிர், இரும்புயிர் என்பன இன்னவெனத் தெரிவிக்க. 6

200

ANNAMALAI UNIVERSITY

B. A. (Hons.) Degree Examination—Final, 1938

BRANCH VI

PRESCRIBED TEXT-BOOKS IN POETRY II

TUESDAY, 29TH MARCH] [10 A.M. TO 1 P.M.

[திருக்குறள்; அகநானூறு; பட்டினப்பாலை; சிலப்பதிகாரம்; கம்பராமாயணம், திருக்கோவை.]

(ஒவ்வொரு கேள்வியிலும் ஒவ்வோர் உட்பிரிவுக்கு விடையெழுத வேண்டியதில்லை.)

Marks

I. 1. "எண்பொருளவாகச் சொல்லித்தான் பிறர்வாய், நுண்பொருள் காண்பதறிவு"—ஈண்டுப் "பொருளவாகச் சொல்லி" "பொருள் காண்பது" என்னுந் தொடர்களிற் புலப்படுங் கருத்தென்னை?

2. சீவகசிந்தாமணிக்கதையின் ஒருபகுதி எக்குறளுரையால் அறியப்படும்? அதனையெழுதி அக்கதையோடு பொருத்திக்காட்டுக.

3. "பேஎய்கண்டன்ன துடைத்து" "அடுமுரண்டேய்க்குமரம்"—இவை யாவை? ஏன் இவ்வாறு கூறல்வேண்டும்?

4. அரசன் ஒற்றர்களை யாளுமாறும், அவரால் நிகழ்ச்சியறியுமாறும், அவர்க்குச் சிறப்புச் செய்யுமாறும் யாங்ஙனம்?

5. இறக்கும் இயல்புடையவர்கள் விரும்பி யேறும் மரக்கலன்களாகக் கூறப்பட்டன யாவை? அவ்வொப்புமையாற் காணப்படும் பொதுத்தன்மை யாது? 40

II. 1. "நெஞ்சநின்வாய், வாய்போற் பொய்ம் மொழியெவ்வ மென்களைமா"—இஃது யார் கூற்று? இங்ஙனங் கூறுதற்குக் காரணம் என்னை?

2. வினைமுற்றிமீண்ட தலைமகனது விரைந்த செலவு அகப்பாட்டில் எவ்வாறு புலப்படுத்தப்பட்டுளது?

3. “ இருப்பை, யார்கழல்புதுப்பூததுய்த் தவாய. ...கொன்றையஞ்சினைக குழற்பழங்கொழுதி, வண்கை யெண்கின் வயநிரை பரக்கும் ”—இதற்கு இறைசசிப்பொருள் கூறுக.

III. 1. படடினப்பாலைத்தலைவன் பகைவர்நாட்டுக்குப் பாழ்படுக்குமுன் ஆங்குப் பொதியில், ‘ செழுநகர் ’ எனனும் இவையிருநத நிலைமையும் பினனர் [illegible]வெய்திய நிலைமையும எவ்வாறு கூறபபட்டுள்ளன ?

2. புகார் நகரததுத தாம் கண்ட மாடங்களின் அமைபபைக் கவி யெஙஙனம வருணிததுள்ளார் ?

3. நெய்தனிலதது மாககள் உவவுக்காலததில் மேற்கொள்ளுஞ் செயலகளென்ன ?

4. “ நெடுநுகததுபபகல ” “ தூறிவர்துறுகல் ” “ மாமலையணைநத கொண்மூ ” “ நிலவடைநதவிருள் ” என்பன எவ்வெவறறிறகு உவமைகளாயின ?

IV. 1. புண்ணியசரவண முதலிய பொய்கைகளில ஆடுதலால வரும் பயன்களை வேறு எவவழியாற பெறலாமெனறு கவுநதியடிகள் கூறுகினறா ?

2. கோவலறகுக கவுநதி கூறும ஆறுதல் மொழிகளுள், காமமும பொருளும்பறறி மிகக இடுமபையெய்திஞோராக எடுததுக்காடடப்படடோர் யாவா ? அவர் சரிததததால் அறிநதனவும அவரினுங் கோவலற்குண்டான நன்மையும யாவை ?

3. “ காதலிதனனையொருங்குடனறழீஇ, வல்லாநடையின்மறுகிறசெலவோன ” என [illegible]ணடுக கூறிய நிகழ்சசியை ஊரசூழ்வரியில் ஆசிரியர் எஙஙனம எடுததாளுகின்றார் ?

4. மதுராபதி யென்னுந தெய்வம கண்ணகிககுப் பாண்டியா பெருமை கூறுங்கால் அவர் இளமையடக்கம எவவாறு கூறபபடடுளது ?

5. கோவலன் கொலைப்பட்டான் என்பது கேட்டவுடன் கண்ணகி வருந்திககூறுந் தொடக்கவுரையிற் காணப்படும் அவள் கருத்தை விளக்கியெழுதுக.

V. 1 தசரதனுடைய மந்திராலோசனைக்குரியார் இயல்பு வருணனையில் நும்பாடப்பகுதியிலுள்ள எவ்வெக்குறள்கள் ஒப்பு நோக்கத்தக்கன?

2. இராமன் அரசுபெறின் கைகேயியின் தந்தைக்குங் கேடுறும் என்பதை மந்தரை எவ்வாறு கூறினாள்?

3. சூரியோதய காலத்தில் மலர்ந்த தாமரைக்கும் குவிந்த அல்லிக்கும் ஒப்பாகக் கூறப்பட்டன யாவை?

4. கைகேயி இரங்காமை குறித்து, அவளைத் தான் முன் மணந்ததையும், தனக்கு இனி வரும் இறப்பையும் பரதன் முடிசூடல் நலமாகாதென்பதையும் தசரதன் எவ்வாறு கூறினான்?

5. "உன்னை நீயென்பொருட்டுதவுவாய்" என்று இராமன் கூறக்கேட்ட இலக்குவன் அவ்வுரை தனக்கு இன்னாதென்பதை எங்ஙனங் கூறினான்? 40

VI. 1. "கோம்பிக்கொதுங்கிமேயாமஞ்ஞை" என வரும் செய்யுளிலுள்ள உவமையை உவமேயத்தோடு பொருத்திக்காட்டுக.

2. "பெரிதும், மாயத்தத்தாகி யிதோவந்து நின்றதென் மன்னுயிரே" ஈண்டுப், "பெரிதுமாயத்தத்தாகி" என்றது எக்கருத்துப்பற்றி?

3. "தீவாயுழுவை கிழித்தத்தந்தோ சிறிதே பிழைப்பித், தாவாமணி வேல்பணி கொண்டவாறின் றோராண்டகையே"—இதன் திணை இன்னதெனக் காரணத்தோடு கூறி நடுங்கநாட்டமாதலை விளக்குக.

4. அகத்துறைப்பொருள் குறிப்பிற்றோன்றப் புறப்பொருள்நிலையிற் கூறிய செய்யுளையாதல் அதன் பொருளையாதல் கூறி அத்துறைப்பொருளை விளக்குக. 30

ANNAMALAI UNIVERSITY

B A (Hons) Degree Examination—Final, 1938

BRANCH VI

TAMIL LANGUAGE & LITERATURE

COMPARATIVE PHILOLOGY AND COMPARATIVE GRAMMAR

WEDNESDAY, 30TH MARCH] [10 A M TO 1 P M

[N. B —*Answer any* EIGHT *Questions Questions carry equal marks*]

I Amplify the statement that an alphabet is the final stage in the evolution of writing

II Discuss any **two** of the following .—

1 "The causes of sound-change in Language are unknown"

2 "The Dravidian languages are destitute of a passive voice, properly so-called"

3. "Phonetic laws work blindly and with blind necessity"

III. Consider the following statement of Dr Caldwell in the light of later researches -- ‘ The Dravidian languages are to be affiliated not so much to the Indo-European as to the Scythian group of tongues."

IV Write short philological notes on the Dravidian numerals five, eight and nine

[T O

V. How is hiatus between concurrent vowels averted in the Dravidian languages?

VI Can you determine the primitive radical element of the Second personal pronoun of the Dravidian languages by a comparison of the various forms?

VII. How is the present tense formed in the several important languages of the Dravidian group? And what is the relationship between the various infixes?

VIII Consider the aspect of gender in the Dravidian Languages

IX Write short notes on any **four** of the following:—(1) Polysemeia, (2) Vowel glide, (3) "Telungu", (4) Word Symbolism, (5) Organs of Speech, (6) Brahui

X "In the Dravidian languages stability in the root-vowels is the rule, change the exception." Discuss

Total 200 Marks.

ANNAMALAI UNIVERSITY

B. Sc (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

PURE MATHEMATICS · I

MONDAY, 21ST MARCH] [10 A.M. TO 1 P.M.

I State and prove Desargues' Theorem on perspective triangles when they lie in the same plane.

Prove that any triangle is in perspective with its polar triangle with respect to a conic. Show also that the centre and the axis of perspective are pole and polar with respect to the conic.

II Prove that, if a quadrangle is inscribed in a conic, its harmonic triangle is self-polar with respect to the conic, and conversely, given any self-polar triangle. there are infinitely many inscribed quadrangles for which it is the harmonic triangle.

State the dual of the above converse and prove that the circum-circle of a triangle self-polar with respect to a conic is orthogonal to its director circle. Deduce that the locus of the centres of Rectangular Hyperbolas for which a given triangle is self-polar is its circum-circle

III. State the constant cross ratio property of conics Prove that the meets of corresponding rays of two homographic pencils is a conic passing through the vertices of the pencils.

A and B are two fixed points, and P is a variable point, such that PA, PB are conjugate with respect to a conic S. Show that the locus of P is a conic through A and B. Examine the nature of the locus when

(1) A and B are conjugate points with respect to S.

(2) AB touches S

By taking A and B to be the circular points at infinity deduce that the locus of points, the tangents from which to a given conic are at right angles is a circle which degenerates into the circular lines through the centre in the case of a rectangular hyperbola, and into the directrix and the line at infinity in the case of a parabola.

IV Prove that four normals can be drawn from any point to a central conic, and that their feet lie on a rectangular hyperbola, which passes through the point, and the centre of the conic, and has asymptotes parallel to the axes of the given conic

Deduce by reciprocation that the unique parabola touching the tangents at the feet of the four normals also touches the axes of the conic

V If $S=0$ and $S'=0$ are the equations of two conics and the discriminant of $S+\lambda S'=0$ is

$$\Delta' \lambda^3+\theta'\lambda^2+\theta\lambda+\Delta=0$$

explain what is meant by saying that Δ', θ', θ, Δ are invariants

Prove that if S, S′ are non-degenerate, the necessary and sufficient condition that a triangle can be inscribed in S′ and circumscribed to S is $\theta^2=4\Delta\theta'$ Show also that, if there is one such triangle, there are infinitely many such triangles and that the locus of the point of intersection of the lines joining the vertices of any such triangle to the points of contact of the opposite sides is the conic $2\theta S-3\Delta S'=0$

VI. Show that, in the system of trilinear co-ordinates, the tangential equation of the circular points at infinity is

$$\Omega=l^2+m^2+n^2-2mn\cos A-2nl\cos B-2lm\cos C=0$$

Prove that the tangential equation of a conic having its real foci at the points $(\alpha\beta\gamma)$ and $(\alpha'\beta'\gamma')$ is of the form $(l\alpha'+m\beta'+n\gamma')(l\alpha+m\beta+n\gamma)+k\Omega=0$.

Hence, or otherwise, show that the foci of a conic inscribed in a triangle are isogonal conjugates with respect to the triangle. Deduce that the locus of the foci of parabolas inscribed in a triangle is the circum-circle.

VII Find the equation of the polar plane of the point (x_1, y_1, z_1) with respect to the central quadric $ax^2 + by^2 + cz^2 = 1$

Prove that if a point describes a fixed line l, its polar plane with respect to the quadric turns about another fixed line l' and that the relation between the two lines is reciprocal.

Show that any normal to one of the ellipsoids

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

$$\frac{x^2}{a_1^2} + \frac{y^2}{b_1^2} + \frac{z^2}{c_1^2} = 1$$

is perpendicular to its polar line with respect to the other if

$$a_1^2(b^2 - c^2) + b_1^2(c^2 - a^2) + c_1^2(a^2 - b^2) = 0$$

VIII Show that by a proper choice of axes, the equations of two non-intersecting lines may be expressed in the form

$$\begin{matrix} y = mx \\ z = c \end{matrix} \quad \text{and} \quad \begin{matrix} y = -mx \\ z = -c \end{matrix},$$

and that any line l intersecting them is given by

$$y - mx = \lambda(z - c)$$

$$y + mx = \mu(z + c)$$

where λ and μ are arbitrary.

If AA′ be the shortest distance between the lines and if l meets the lines at P and P′, such that the spheres on PP′ and AA′ as diameters are orthogonal, prove that $\lambda\mu(m^2 - 1) + 2m^2 = 0$

and that l traces out the hyperboloid

$$(1 - m^2)(y^2 - m^2x^2) = 2m^2(z^2 - c^2)$$

IX. Obtain the real circular sections of the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ State what is meant by the umbilics of the ellipsoid and obtain their co-ordinates.

Show that the sections of a quadric and of an enveloping cone by any plane, are conics having double contact with each other Deduce that the tangent plane at an umbilic cuts any enveloping cone along a conic having a focus at the umbilic Hence show that the foci of the section of a cone by any plane, are the points of contact with the plane of the two spheres inscribed in the cone and touching the plane

X. The tangents of twisted curve are inclined at a constant angle to a fixed line Prove that the curvature and torsion of the curve are in a constant ratio

Show that the radius of curvature, and the radius of torsion at any point of the curve

$$x = c \log (\sec \psi + \tan \psi)$$
$$y = c \sec \psi$$
$$z = c \tan \psi$$

are each numerically equal to $\frac{s^2 + 2c^2}{c}$ where s is the length of the arc of the curve measured from a suitable point on it.

XI. Define the polar curves of a plane curve with respect to a point in its plane. Prove that the first polar of the curve with respect to any point P, passes through the points of contact of the tangents from P to the curve, and also through the double points of the curve, if any. Show also that the tangent of the first polar of P at a node O of the original curve, is the harmonic conjugate of OP with respect to the nodal tangents. What happens when O is a cusp? Deduce that the class of a curve of order n with δ nodes and κ cusps is $n(n-1) - 2\delta - 3\kappa$.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

PURE MATHEMATICS: II

WEDNESDAY, 23RD MARCH] [10 A.M. TO 1 P.M.

I. (i) If a and n be integers prime to each other, and $\phi(n)$ is the number of integers less than n and prime to it, show that

$$a^{\phi(n)}-1\equiv 0 \bmod (n).$$

Deduce Fermat's Theorem.

(ii) Prove that when n is a prime greater than p,

$$(p-1)!\ (n-p)!=(-1)^p \bmod (n).$$

II. (i) Show that

$$\begin{vmatrix} a & -1 & -1\cdot & \cdot & \cdot & \cdot & -1 \\ -1 & a & -1\cdot & \cdot & \cdot & \cdot & -1 \\ -1 & -1 & a\cdot & \cdot & \cdot & \cdot & -1 \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ -1 & -1 & -1\cdot & \cdot & \cdot & \cdot & a \end{vmatrix}=(a-n+1)(a+1)^{n-1}$$

the determinant being of the nth order.

(ii) If $x=\frac{1}{a_1+}\,\frac{1}{a_2+}\cdot\cdot+\frac{1}{a_{r-1}+}\,\frac{1}{a_r+}\,\frac{1}{a_{r+1}+}\cdot\cdot+\frac{1}{a_n}$

prove that the continued fraction

$$\frac{1}{a_1+}\,\frac{1}{a_2+}\cdot\cdot\cdot+\frac{1}{a_{r-1}+}\,\frac{1}{a_{r+1}+}\,\frac{1}{a_{r+2}+}\cdot\cdot\cdot+\frac{1}{a_n}$$

(where the element a_r is omitted) is

$$\frac{x(p_{r-1}\,q_{r-1}-p_{r-2}\,q_r)+p_{r-2}\,p_r-p_{r-1}^2}{x(q_{r-1}^2-q_{r-2}\,q_r)+p_r\,q_{r-2}-p_{r-1}\,q_{r-1}}$$

the rth convergent of x being denoted by $\frac{p_r}{a_r}$.

III. (i) If $z^3 + 3hz + g \equiv \frac{1}{\mu - \nu}\{\mu(z+\nu)^3 - \nu(z+\mu)^3\}$,

show that
$$2\mu = \frac{1}{h}\{g + \sqrt{g^2 + 4h^3}\}$$
$$2\nu = \frac{1}{h}\{g - \sqrt{g^2 + 4h^3}\}$$

(ii) Prove that if a is an approximation to a root of an equation $f(x) = 0$, then $a - \frac{f(a)}{f'(a)}$ is, in general, a closer approximation.

Hence or otherwise find correct to two places of decimals the root between 2 and 3 of the equation
$$x^4 - 12x + 7 = 0.$$

IV. If the infinite sequence a_n tends to a limit, show that the sequence $\frac{a_1 + a_2 + \cdots + a_n}{n}$ tends to the same limit.

Examine for convergence
$$1 - \frac{1 + \frac{1}{2}}{2} + \frac{1 + \frac{1}{2} + \frac{1}{3}}{3} - \frac{1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4}}{4} + \cdots\cdots$$

If $u_1 + u_2 + u_3 + \cdots\cdots$; $v_1 + v_2 + v_3 + \cdots\cdots$ converge respectively to U, V, while
$$w_n = u_1 v_{n-1} + u_2 v_{n-2} + \cdots + u_{n-1} v_1$$
and
$$W_n = w_1 + w_2 + \cdots\cdots + w_n$$
show that $\underset{n \to \infty}{\mathrm{Lt}} \frac{W_1 + W_2 + \cdots + W_n}{n} = UV.$

V. Explain how to find the extrema of a function $f(x, y, z)$ subject to the condition $g(x, y, z) = 0$.

If a, b, c, and $4(ab + bc + ca) - (a + b + c)^2$ are all positive, and $ax + by + cz = 1$, show that there is only one stationary value of $(xy + yz + zx)$ and that it is a maximum. Obtain this maximum.

VI. (i) Evaluate
$$\underset{x \to 0}{\mathrm{Lt}} \frac{(1+x)^{1/x} - e + \frac{ex}{2}}{x^2}$$

(ii) Which of the following two functions tends to infinity more rapidly as $x \rightarrow \infty$

$$\frac{x^{(x^2)}}{(x\,!)^x}; \quad 2^{(x^2)}$$

(iii) $f(x, y) = xy\dfrac{x^2 - y^2}{x^2 + y^2}$ for $x, y \neq 0$;

$f(0, 0) = 0.$

Show that $f(x, y)$ is continuous at the origin, and that $\dfrac{\partial^2 f}{\partial x \partial y}$ and $\dfrac{\partial^2 f}{\partial y\, \partial x}$ both exist at the origin, but are unequal.

VII. (i) At the point "t" on a plane curve, the tangent is $x f(t) + yg(t) = 1$. Obtain the equation of the normal at "t".

If $f(t) = \dfrac{\sin(t/2)}{a \sin(3t/2)}$; $g(t) = \dfrac{\cos(t/2)}{a \sin(3t/2)}$

show that the tangent at a point P of the curve, meets the curve again in two other points Q, and R and that the normals at P, Q, R are concurrent.

(ii) Obtain the (r, θ) equation of the curve $r^3 = pa^2$; and show that its inverse with respect to the origin is a rectangular hyperbola.

VIII. If $f(x)$ is differentiable in (a, b) show that

$$f(b) - f(a) = (b - a) f'(\xi) \qquad a < \xi < b.$$

If $f(x)$ and $\phi(x)$ possess second derivatives in (a, b), prove that there is in general, a number ξ in the interval such that

$$\frac{f(b) - 2f\left(\frac{a+b}{2}\right) + f(a)}{\phi(b) - 2\phi\left(\frac{a+b}{2}\right) + \phi(a)} = \frac{f''(\xi)}{\phi''(\xi)}.$$

IX. (i) Show that the asymptotes of

$$x(x^2 - y^2) - y(x + y) - x + 1 = 0$$

intersect the curve in three collinear points. Examine how the curve is placed with respect to its asymptotes.

(ii) A plane algebraic curve has a point of inflexion Show that its evolute cannot be closed, and that the evolute has an asymptote which it approaches at opposite extremities on different sides

What happens when the point on the given curve is an undulation?

X Prove Lagrange's Theorem that the order of a sub-group of a given finite group is a factor of the order of the given group

Obtain the group of rotations which carry a regular tetrahedron into itself, and show that it is simply isomorphic with the alternating group of degree four. Show that the tetrahedral group has an invariant sub-group of order four, which is simply isomorphic with the group of metrical transformations carrying each system of generators of a hyperboloid of one sheet into itself

XI Write an essay on Infinite series including a brief discussion of the connection between

(i) Absolute convergence and certain algebraic operations,

(ii) Uniform convergence and continuity,

(iii) Uniform convergence and the operations of Differentiation and Integration.

Show that in the case of power series, the operations mentioned in (i) and (iii) are valid inside a certain interval.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

PURE MATHEMATICS: III

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

I. (i) When n is an odd positive integer show that

$$\frac{\sin n\theta}{\sin\theta} = n - \frac{n(n^2-1^2)}{3\,!}\sin^2\theta + \frac{n(n^2-1^2)(n^2-3^2)}{5\,!}\sin^4\theta - \cdots$$

$$\cdots\cdots + (-1)^{\frac{1}{2}n-1}\, 2^{n-1}\sin^{n-1}\theta.$$

(ii) Sum to $2n$ terms the series

$$\tan\alpha + \tan\left(\frac{\pi}{2n}-\alpha\right) + \tan\left(\frac{2\pi}{2n}+\alpha\right) + \tan\left(\frac{3\pi}{2n}-\alpha\right) + \cdots$$

II. Show that every value of either side of the equation $2i\cot^{-1}z = \log(z+i)(z-i)$ is equal to a value of the other side, z being any complex number.

If n be real, and the inverse functions have their principal values, show that the sum of the infinite series

$$\cot^{-1}\tfrac{1}{2}n^2 + \cot^{-1}\tfrac{1}{2}(3n)^2 + \cot^{-1}\tfrac{1}{2}(5n)^2 + \cdots\cdots$$

$$= \tan^{-1}\left\{\tan\frac{\pi}{2n}\tanh\frac{\pi}{2n}\right\}.$$

III. (i) Define the Upper and Lower Integrals of a bounded function in an interval. When is a function integrable (according to Riemann)? Show that a bounded monotonic function is integrable. If each $u_n(x)$ is integrable in (a, b) and $\sum\limits_{1}^{\infty} u_n(x)$ converges uniformly in (a, b) and $R_n(x) = u_{n+1}(x) + u_{n+2}(x) + \cdots\cdots$ show, that $R_n(x)$ is integrable in (a, b) when n is large enough.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

PURE MATHEMATICS: III

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

I. (i) When n is an odd positive integer show that

$$\frac{\sin n\theta}{\sin\theta} = n - \frac{n(n^2-1^2)}{3\,!}\sin^2\theta + \frac{n(n^2-1^2)(n^2-3^2)}{5\,!}\sin^4\theta - \cdots$$

$$\cdots\cdots + (-1)^{\frac{1}{2}(n-1)}\, 2^{n-1}\sin^{n-1}\theta.$$

(ii) Sum to $2n$ terms the series

$$\tan\alpha + \tan\left(\frac{\pi}{2n}-\alpha\right) + \tan\left(\frac{2\pi}{2n}+\alpha\right) + \tan\left(\frac{3\pi}{2n}-\alpha\right) + \cdots$$

II. Show that every value of either side of the equation $2i\cot^{-1}z = \log(z+i)/(z-i)$ is equal to a value of the other side, z being any complex number.

If n be real, and the inverse functions have their principal values, show that the sum of the infinite series

$$\cot^{-1}\tfrac{1}{2}n^2 + \cot^{-1}\tfrac{1}{2}(3n)^2 + \cot^{-1}\tfrac{1}{2}(5n)^2 + \cdots\cdots$$

$$= \tan^{-1}\left\{\tan\frac{\pi}{2n}\tanh\frac{\pi}{2n}\right\}.$$

III. (i) Define the Upper and Lower Integrals of a bounded function in an interval. When is a function integrable (according to Riemann)? Show that a bounded monotonic function is integrable. If each $u_n(x)$ is integrable in (a, b) and $\sum_{1}^{\infty} u_n(x)$ converges uniformly in (a, b) and $R_n(x) = u_{n+1}(x) + u_{n+2}(x) + \cdots\cdots$ show that $R_n(x)$ is integrable in (a, b) when n is large enough.

Deduce that $f(x)$ is integrable in (a, b) and that

$$\int_a^b f(x)dx = \sum_1^{\infty} \int_a^b u_n(x)dx.$$

(ii) Show that

$$\mathop{\mathrm{Lt}}_{n\to\infty} \frac{1}{n^2} \sum_{r=0}^{n-1} \sqrt{n^2 - r^2} = \frac{\pi}{4}.$$

IV. (i) Show that $\int_0^{\infty} \frac{\sin z}{z^n} dz$ converges uniformly but not absolutely when $0 < n \leqslant 1$.

(ii) Evaluate $\int_0^1 \frac{\log(1+x)}{1+x^2} dx$; $\int_0^{\infty} \frac{\cos mx}{1+x^2} dx$.

V. (i) If $f(x, y) = \frac{x^2 - y^2}{(x^2+y^2)^2}$ show that

$$\mathop{\mathrm{Lt}}_{\xi\to\infty} \left[\mathop{\mathrm{Lt}}_{\eta\to\infty} \int_1^{\xi} dx \int_1^{\eta} f(x, y)dy \right]$$

$$= \mathop{\mathrm{Lt}}_{\xi\to\infty} \left[\int_1^{\xi} dx \left\{ \mathop{\mathrm{Lt}}_{\eta\to\infty} \int_1^{\eta} f(x, y)dy \right\} \right] = -\frac{\pi}{4}$$

while $$\mathop{\mathrm{Lt}}_{\eta\to\infty} \left[\mathop{\mathrm{Lt}}_{\xi\to\infty} \int_1^{\eta} dy \int_1^{\xi} f(x, y)dx \right]$$

$$= \mathop{\mathrm{Lt}}_{\eta\to\infty} \left[\int_1^{\eta} dy \left\{ \mathop{\mathrm{Lt}}_{\xi\to\infty} \int_1^{\xi} f(x, y)dx \right\} \right] = \frac{\pi}{4}$$

but that when ξ, η both tend to infinity simultaneously but independently

$$\mathop{\mathrm{Lt}}_{\xi,\eta\to\infty} \int_1^{\xi} dx \int_1^{\eta} f(x, y)dy \text{ does not exist.}$$

(ii) Evaluate $\int_0^{\infty} dy \left[\int_0^{\infty} e^{-xy} \sin x \, dx \right]$.

VI. (i) Change the order of integration in

$$\int_0^a dx \int_0^x f(x, y)dy$$

and hence show that

$$\int_0^a dx \int_0^x (x-y)^n f(y)dy = \frac{1}{n+1} \int_0^a y^{n+1} f(a-y)dy$$

(ii) Find the area of the loop of the curve
$$x^3 + y^3 = 3axy.$$

VII. (i)
$$\begin{aligned} f(x) &= x^2 \qquad (0 \leqslant x \leqslant \pi/2) \\ &= x \qquad (\pi/2 < x \leqslant \pi). \end{aligned}$$

Obtain series of cosines of multiples of x to represent $f(x)$ in the above interval. What is the sum of the series for $x = \pi/2$?

(ii) Show that

$$\underset{n \to \infty}{\text{Lt}} \int_0^a \frac{\sin n x}{\sin x} dx = \frac{\pi}{2} \quad (0 < a < \pi).$$

Evaluate the integral when $a = \pi$.

VIII. When are two aggregates said to be " Equivalent " ?

Show that the aggregate of all points in a straight line is equivalent to the aggregate of all points inside a cube.

Define the cardinal Number of an aggregate.

Show that $C = 3^{N_0}$ where C is the cardinal number of the continuum, and N_0 that of an enumerable aggregate.

IX. (i) If the evolute of a curve be termed the first evolute, and the evolute of this latter be termed the second evolute of the original curve and so on, find the intrinsic equation of a curve for which the nth evolute is a circle.

(ii) Solve the equation

$xp^2 - 2yp + ax = 0$ where p stands for $\dfrac{dy}{dx}$. Obtain the singular solution and interpret it geometrically.

(iii) Solve:

$$x^2 \frac{d^3y}{dx^3} + 3x \frac{d^2y}{dx^2} + \frac{dy}{dx} = \frac{1}{x}.$$

X. (i) Obtain the necessary and sufficient condition for $P\,dx + Q\,dy + R\,dz = 0$ to be integrable.

If $P = yz$ and $Q = zx$, show that R must be of the form $f(xy, z)$ in order that the equation may be integrable.

If $R = \dfrac{\sin(xy)}{z^2}$ solve the equation.

(ii) Solve.

$$\frac{dx}{a_1x + b_1y + c_1z + d_1} = \frac{dy}{a_2x + b_2y + c_2z + d_2} = \frac{dz}{a_3x + b_3y + c_3z + d_3}.$$

XI. Give an account of some of the tests that are in general use for establishing the convergence of integrals for which the integrand is bounded but one of the limits of integration is infinite. Which of these tests imply also absolute convergence? How are these tests to be modified when the limits are finite but the integrand is unbounded at one of the limits?

ANNAMALAI UNIVERSITY

B. Sc. (Hons) Degree Examination—Final, 1938

BRANCH I

APPLIED MATHEMATICS I

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

I. With the usual notation, prove that the differential equation of a central orbit is

$$\frac{d^2u}{d\theta^2}+u=\frac{P}{h^2u^2}$$

Define apsidal distances, and show that in a central orbit, there can be utmost only two apsidal distances. If the central acceleration be $\phi(r)$ and the two apsidal distances be a, b $(a<b)$ prove that the velocity at a distance r is given by the equation

$$v^2=\frac{2a^2}{b^2-a^2}\int_a^r \phi(r)\,dr+\frac{2b^2}{b^2-a^2}\int_r^b \phi(r)\,dr$$

II. Show that the component accelerations resolved along the tangent and the normal to the path of a point moving in a plane curve are $v\frac{dv}{ds}$ and $\frac{v^2}{\rho}$ respectively, where v is the velocity of the point and ρ is the radius of curvature of the path

A heavy particle is projected horizontally with velocity u along the surface of a rough inclined plane. Show that the velocity at any point is

$$u\sec\psi\,(\sec\psi-\tan\psi)^{\mu\cot\alpha}$$

where μ is the coefficient of friction, α the inclination of the plane to the horizontal, and ψ the inclination of the tangent to the path to its initial direction.

Show also that if $\mu=\tan\alpha$, the particle attains a terminal velocity $u/2$.

III. A heavy uniform chain lies coiled on a table and one end of it is attached to a cord of negligible mass which passes over a small smooth pulley directly above the end of the chain and carries a body of mass equal to a length l of the chain. The system starts from rest in such a position that the whole of the chain is on the table and the cord just taut. Prove that if a length x of the chain has been dragged off the table in time t before the system comes to rest

$$(l+x)\frac{d^2x}{dt^2}+\left(\frac{dx}{dt}\right)^2=(l-x)\,g.$$

Prove also, if the height of the pulley above the table is greater than $l\sqrt{3}$, the system comes to instantaneous rest when a length $l\sqrt{3}$ of the chain has been dragged off the table.

IV. A particle is performing simple harmonic motion in a straight line Discuss its motion, when it is subject to (1) a damping proportional to its velocity, (2) a periodic force of magnitude A cos pt. Show that if it is subjected to both, the free vibration gradually dies out, and only the forced vibration continues. Show also that, if in this case, the period of the external force is adjusted so that it excites forced vibrations of the largest possible amplitude, it is then $\dfrac{1}{\sqrt{2\nu_1^2-\nu^2}}$

where ν is the frequency of the original simple harmonic motion and ν_1 its value when it is affected by damping alone

V. Show how to find the motion of a particle acted upon by given forces and constrained to move in a smooth tube in the form of a plane curve, which revolves uniformly about an axis in its plane.

A small heavy bead slides on a circular wire of radius a in a vertical plane, which revolves with constant angular velocity w about its vertical diameter. Find the position of stable equilibrium according as $w^2 \gtrless \frac{g}{a}$ and show that the time of a small oscillation about the position of equilibrium is, for the two cases, equal to

$$\frac{2\pi\, aw}{\sqrt{w^4a^2-g^2}} \text{ and } \frac{2\pi}{\sqrt{\frac{g}{a}-w^2}}$$

respectively.

VI. Define equimomental systems. Show that a uniform triangular lamina of mass m is equimomental with three particles each of mass $m/3$ placed at the mid-points of its edges.

Show that the inscribed ellipse which touches the sides of a uniform triangular lamina at their middle points is a momental ellipse for the lamina at its centre of gravity.

VII. A rigid body is free to rotate about a horizontal axis. Obtain the length of the simple equivalent pendulum.

A uniform rod hangs freely from one end, the other end being close to the ground. An angular velocity in a vertical plane is then communicated to it, and when it has risen through an angle of 90°, the end by which it was hanging is released Obtain the subsequent motion, and show that if, on falling to the ground, it pitches in an upright position, the initial angular velocity must be given by

$$w^2 = \frac{g}{2a}\left[3 + \frac{p^2}{p+1}\right]$$

where p is an odd multiple of $\pi/2$ and $2a$ is the length of the rod.

VIII. Obtain expressions for the kinetic energy and angular momentum of a lamina moving in its own plane.

A heavy sphere of radius a is set rolling from the position of equilibrium inside a fixed hollow sphere of radius b, so that its centre moves in a vertical plane Show that in order that it may roll all round the interior of the hollow sphere without sliding the velocity of the centre of the rolling sphere at the lowest point of its path must exceed

$$\sqrt{27\ (b-a)\ g/7}$$

the friction being sufficiently great to prevent slipping.

IX. Define impulsive forces. Explain the general method of passing from the equations of motion under finite forces to those under impulsive forces. Explain also why we ignore finite forces when impulsive forces act.

A uniform bar of length $2a$ rests symmetrically on two pegs at a distance $2c$ apart in a horizontal line. The pegs are supposed to be sufficiently rough to prevent slipping. One end of the bar is raised and released. Investigate the subsequent motion on the hypothesis that there is no recoil whenever the bar strikes a peg. Prove that, if $c^2 < a^2/3$, the angular velocity is instantaneously reduced at each impact in the ratio $a^2 - 3c^2 : a^2 + 3c^2$.

X. Obtain Lagrange's equations of motion of a conservative holonomic system, and deduce from them the principle of energy, if the geometrical equations do not involve the time explicitly.

A ring slides on a smooth circular wire of equal mass and of radius a, which can turn freely about a horizontal axis perpendicular to its plane, through a fixed point on the circumference. Prove that the periods of small oscillations of the system are

$$2\pi\sqrt{\frac{a}{2g}} \text{ and } 2\pi\sqrt{\frac{2a}{g}}$$

XI. Elucidate the dynamical principles underlying the following.—

(1) A workman lowers his hands while receiving a pile of tiles from another on the roof.

(2) The handle of an axe is made of wood and not of iron.

(3) A tennis ball given a sufficiently powerful undercut and falling near the net on the opposite court sometimes rebounds back to the court from which it is sent.

(4) A cat held with its feet upwards and let go is found, after falling through a sufficient height, to alight on its feet.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH I

APPLIED MATHEMATICS II

FRIDAY, 25TH MARCH] [10 A.M TO 1 P M.

I State and prove the principle of virtual work for any system of coplanar forces.

Two small smooth rings of equal weight slide on a fixed elliptical wire whose major axis is vertical and are connected by a light string which passes over a small smooth peg at the upper focus, show that the rings will rest in equilibrium in all positions.

II. State the laws of statical friction and show that if two bodies be in contact the resultant reaction at the point of contact cannot have any direction lying outside a certain cone.

If a uniform beam of length $2h$ can rest with one end on a rough horizontal plane and against the top of a wall of height h, in a vertical plane perpendicular to the wall and at any inclination to the wall show that the angle of friction between beam and both wall and ground, supposed to be equally rough, must not be less than $\frac{1}{2} \sin^{-1} \frac{4}{3\sqrt{3}}$.

III. Explain how the stability of equilibrium of a system of bodies subject to gravity can be determined by considering the height of the centre of gravity of the system above a fixed plane Show that, in general, the positions of stable and unstable equilibrium occur alternately.

A square board is hung flat against a wall by means of a string fastened to the two extremities of the upper edge and hung round a perfectly smooth peg. Given that the length of the string is less than the diagonal of the board, determine the positions of stable equilibrium.

IV. Find the resultant wrench of two given wrenches (K_1, R_1) and (K_2, R_2)

Show that in general two systems of forces can have only one pair of conjugate lines in common.

V A heavy uniform string rests in contact with a smooth curve Find the tension and normal reaction at any point.

If the curve be a catenary whose axis is vertical and vertex upwards, show that the reaction at any point varies inversely as the square of the distance of the point below the directrix of the catenary

VI The zenith distance of a known star is observed with a view to calculating the hour angle If there is an error δz in the zenith distance, what is the effect on the hour angle? Under what circumstances will the ratio between the two errors be constant throughout the day?

If δ be a star's declination, h its hour angle, and a its azimuth which has a maximum value A, show that

$$\left(\frac{d^2a}{dh^2}\right)_{a=A} + \tan A \sin^2\delta = 0.$$

VII Explain the phenomenon of the harvest moon in detail supplying the requisite equations in full.

If the moon is seen in the form of a bright semi-circle with its diameter vertical at latitude ϕ when the sun is at summer solstice, find the time before or after midnight and also the azimuth of the moon at the instant, on the assumption that the moon travels on the ecliptic.

VIII. Show that the period of retrograde motion of any planet as observed from the earth is shorter than that of progressive motion

If E be the elongation of a planet from the sun at a stationary point and if the orbits of the earth and planet are coplanar and circular with radii a and b respectively, show that

$$\frac{a^2}{b^2}\sin^2 E + \frac{b}{a}\cos^2 E = 1.$$

IX. Obtain the general differential equation of refraction Assuming that the height of the effective atmospheric region is small in comparison with the earth's radius, express the total refraction in the form A tan z + B tan$^3 z$

Show that at every place there is at a given instant one position of a star for which the refraction is entirely counteracted by aberration. Show also that at midnight on the shortest day the zenith distance of the star is given by

$$\sin^2 z + m \sin z = 1,$$

where m is a function of the constants of refraction and aberration

X. Describe the three errors of the transit instrument and determine their effects on the observed time of transit of a star

If the western pivot of the instrument be α seconds higher and β seconds more to the north than the eastern, show that a star is unaffected if its declination satisfies the equation

$$\tan(\phi - \delta) = \tan\alpha \operatorname{cosec}\beta,$$

where ϕ is the latitude of the observer

XI Derive the fundamental equation for the phases of a lunar eclipse and point out how the magnitude and duration of the eclipse may be determined from it.

ANNAMALAI UNIVERSITY

B. Sc (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

APPLIED MATHEMATICS: III

MONDAY, 28TH MARCH] [10 A.M. TO 1 P M.

I. (1) Define the triple scalar product $[\mathbf{ABC}]$ of three vectors, and prove that $[\mathbf{ABC}] = [\mathbf{BCA}] = [\mathbf{CAB}]$

(2) Prove that for any four vectors,

$$\mathbf{A}[\mathbf{BCD}] + \mathbf{B}[\mathbf{CAD}] + \mathbf{C}[\mathbf{ABD}] = \mathbf{D}[\mathbf{ABC}]$$

(3) If the vector $\mathbf{D}$ is perpendicular to vector $\mathbf{C}$, prove that the scalar product of $\mathbf{D}$ and $\mathbf{A} \times (\mathbf{B} \times \mathbf{C})$ is $(\mathbf{C}\ \mathbf{A})(\mathbf{B}\ \mathbf{D})$

II (1) Prove the relations

$$\text{rot grad } \phi = 0; \quad \text{div rot } \mathbf{A} = 0.$$

(2) If $\mathbf{B} = \lambda \text{ grad } \psi$, where λ and ψ are scalar functions prove that

$$\text{div } \mathbf{B} = \lambda \nabla^2 \psi + \text{grad } \lambda \cdot \text{grad } \psi,$$

$$\text{rot } \mathbf{B} = [\text{grad } \lambda \times \text{grad } \psi],$$

and deduce the relation

$$\mathbf{B} \cdot \text{rot } \mathbf{B} = 0.$$

III. State and prove Gauss' theorem

$$\iiint \text{div } \mathbf{A}\, d\tau = \iint \mathbf{A}_n\, d\sigma$$

and give a simple illustration from Hydro-mechanics.

$\mathbf{E}$ and $\mathbf{D}$ are two vectors such that

$$\mathbf{E} = \text{grad } \phi, \quad \mathbf{D} = \frac{\mathbf{E}}{\sqrt{1 - \mathbf{E} \cdot \mathbf{E}}}$$

and ϕ a solution of the differential equation $\text{div} \cdot \mathbf{D} = 0.$

Further putting

$$\mathbf{G} = (\phi_1 - \phi_2)(\mathbf{D}_1 - \mathbf{D}_2)$$
$$u = (\mathbf{E}_1 - \mathbf{E}_2)\cdot(\mathbf{D}_1 - \mathbf{D}_2)$$

corresponding to two solutions ϕ_1, ϕ_2 of the differential equation, prove

(i) $u \geq 0$ at all points, the equality being true only if $\mathbf{E}_1 = \mathbf{E}_2$.

(ii) div $\mathbf{G} = u$

(iii) If ϕ is given on the boundary Γ of a bounded region R, the solution of the differential equation in R is unique

(iv) If $\mathbf{D}_n$ is given on Γ, the solution is unique except for a constant

IV Show that the Newtonian field due to a homogeneous double layer can be represented either as the gradient of a scalar potential, or as the rotation of a vector potential.

Prove that this vector potential **A** can be expressed as the solution of a differential equation of the Poisson form

$$\nabla^2 \mathbf{A} = -1.$$

V Obtain an expression for the density of force in an electrostatic field in terms of the field strength and show that the density can be expressed as the vector divergence of a tensor of the second order Reduce the matrix of the tensor to its diagonal form, and interpret the spur of the matrix

Find the energy per unit of surface of a plane parallel plate condenser in which the superficial charge density is ρ, and the distance between the plates is d

VI. Prove that the capacity of a spherical conductor is equal to its radius, and deduce that of a spherical condenser bounded by two concentric spheres of radii a and b $(b > a)$.

For a condenser formed by three spherical conductors of radii a, b, c $(c>b>a)$ in which the first and last are connected to earth, show that the capacity is $\frac{ab}{b-a}+\frac{bc}{b-c}$.

VII State Ohm's law for steady linear currents, and deduce Kirchhoff's laws for a network of currents

Prove that when a steady current flows through a network of conductors (not containing batteries) the currents are distributed in such a way that the rate of work done in the network is a minimum

VIII. Prove that the potential due to a magnetised body may be written in the form

$$\Omega = \iint \frac{\mathbf{P}_n}{r}\, d\sigma - \iiint \frac{1}{r}\, \nabla_s \cdot \mathbf{P}\, d\tau$$

where $\mathbf{P}$ is the vector of specific magnetisation Deduce that if vectors $\mathbf{H}$ and $\mathbf{B}$ be defined by

$$\mathbf{H} = \operatorname{grad} \Omega, \quad \mathbf{B} = \mathbf{H} + 4\pi \mathbf{P}$$

then $\operatorname{div} \mathbf{B} = 0$.

Show that the mutual potential energy of a uniformly magnetised sphere of radius a, and a uniform external field $\mathbf{X}$ is given by

$$-\frac{4}{3}\pi a^3\, \mathbf{I}\cdot\mathbf{X}$$

the vector $\mathbf{I}$ of magnetisation being in the direction of $\mathbf{X}$.

IX Prove Ampere's law for the potential of the mechanical force mutually exerted between two electric currents in the form

$$V = -\frac{i i'}{c^2} \iint \frac{\mathbf{T}\,\mathbf{T}'\, ds\, ds'}{r}$$

and deduce that similarly directed current-elements attract each other while oppositely directed ones repel each other.

A current i flows in a circular wire of centre A and radius a, and a current i' in a parallel circular wire whose centre B is on the axis of the first circle and whose radius is b ($>a$). If AB $= x$, prove that the potential energy of the system is

$$-2\pi^2 ii'a^2b^2(a^2+x^2)^{-3/2}.$$

X. Give a simple derivation of the first principal equation of the electro-magnetic field

$$\text{rot } \mathbf{H}=\frac{4\pi}{c}\mathbf{i}$$

and deduce an expression for the magnetic field strength in the interior of a long solenoid.

If solenoid consists of insulated wire wound on a circular ring and n be the number of turns, i the current in e.m.u., prove that the magnetic field at a point inside the ring and distant r from its axis is given by

$$\mathbf{H}=2ni/r$$

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

OPTIONAL SUBJECT I—STATISTICS

THURSDAY, 24TH MARCH] [10 A.M. TO 1 P.M.

I. State and prove the addition and multiplication theorems in the theory of probabilities.

An urn contains n similar balls. Some or all of the balls are drawn. Show that the odds are more in favour of an odd drawing than of an even drawing, but that they become nearly equal when n is large.

II. Explain how the business of Life-Insurance is based on an application of the concept of mathematical expectation.

A promises to give B a rupee if he throws six at the first throw with two dice, two rupees if he throws six at the second throw, three rupees at the third throw and so on, until a six is thrown. Calculate the value of B's expectation.

III. Investigate the equations of consistence for a universe of three attributes.

The following data are given with respect to a number of students of a college observed for the attributes A (residence in uncertified hostels), B (low birth), C (rebellious spirit).

$N = 769$, $A = 67$, $B = 84$, $C = 61$, $AB = 26$, $BC = 35$.

Prove that there are some students not living in uncertified hostels who are of rebellious spirit, and find the least number of such students.

IV. (1) Define the terms Mean Deviation, and Standard Deviation and show that the following relations exist between σ the standard deviation, and Δ the mean deviation of the first $(2N-1)$ natural numbers

$$\sigma = \sqrt{(2N-1)\,\Delta/3}$$

(2) The following table gives the distribution of height in a sample of 1000 male adults.

Height in inches	56·4	57·4	58·4	59·4	60·4	61·4	62·4	63·4	64·4	65·4
Frequency	1	2	6	19	25	76	123	149	167	180
Height in inches	66·4	67·4	68·4	69·4	70·4	71·4	72·4	73·4	74·4	75·4
Frequency	118	77	33	13	3	3	3	1	—	1

Obtain a measure of Asymmetry of the distribution and comment upon it.

V. Obtain the equation to the normal curve of error on the assumption that the Mean is the most probable value of the unknown

Find the equation of the normal curve which fits the distribution given in Question IV (2) above How would you test the goodness of fit?

VI. When the regression between two variables is suspected to be non-linear, explain how you would proceed to confirm or reject your conjecture and state how you would measure the correlation coefficient between the two variables when the regression is linear.

A set of n observations of the simultaneous values of x and y is made by one investigator. The standard deviations and the product-moment coefficient are found to be σ_x, σ_y and p_{xy} respectively. A second observer making the same observations makes a constant error E_x in determining each x and a constant error E_y in determining each y. The two sets of observations are combined into a single table, and the coefficient of correlation is calculated from it. Show that the value obtained will be

$$\frac{p_{xy} + \frac{1}{4} E_x E_y}{\sqrt{(\sigma_x^2 + \frac{1}{4} E_x^2)(\sigma_y^2 + \frac{1}{4} E_y^2)}}$$

VII (1) When there are n independent linear observational equations in m unknowns, with weights p_1, p_2, etc and residuals v_1, v_2, etc., prove that the probable error of an observational equation of unit weight is

$$\cdot 6745 \sqrt{\frac{[p\ v\ v]}{(n-m)}}$$

(2) Find the best values of the levels of ABC and D, above O given that the height of A above O is 575 ft., D above B is 175 ft., B above O is 648 ft., C above B is 165 ft. and D above C is 9 ft.

VIII Explain the rationale of the differential equation of Pearson's generalised probability curve, and apply the method of moments to determine the constants in the equation.

Show how you would determine the type of curve that will fit any given frequency distribution

IX. Show that the normal correlation surface for two correlated variables in the form

$$z = ke^{-\frac{1}{2}\left(\frac{x^2}{\sigma_x^2} + \frac{y^2}{\sigma_y^2} - \frac{2\,rxy}{\sigma_x \sigma_y}\right)}$$

could be considered as having been obtained by turning it from the position for which the variables are uncorrelated through an angle depending upon σ_x σ_y and r, and determine the angle for a given σ_x, σ_y and r.

Deduce equations for contour ellipses referred to the principal axes of the normal correlation surface fitted to the following data.

Total number of observations.	1000
Mean of Y's	72·60
Mean of X's	66·45

r_{xy}	0·62
σ_y	4 91
σ_x	3·80

X Write an essay on *any one* of the following topics.—

(1) Statistics is the science of averages and deals with variation in aggregates and not in individuals.

(2) The place of "Aposteriori Probabilities" in the general theory of probabilities especially in relation to the severe criticism to which it has been subjected.

(3) The nature, function and construction of Index Numbers.

ANNAMALAI UNIVERSITY

B. Sc (Hons) Degree Examination—Final, 1938

BRANCH I

MATHEMATICS

OPTIONAL SUBJECT II

DIFFERENTIAL EQUATIONS

TUESDAY, 29TH MARCH] [10 A M TO 1 P M.

I Explain the classification of the integrals of a partial differential equation of the first order as "complete", "general", and "singular", and the geometrical relations of these to one another.

Illustrate these by means of the differential equation whose complete integral is given by

$$x^2 + y^2 + z^2 = 2\alpha x + 2\beta y + 2\gamma z$$

with $\alpha^2 + \beta^2 + \gamma^2 = a^2$, a being a given constant, and α, β, γ arbitrary Determine the characteristic curves.

II. Write a short note on Jacobi's method of solving the general partial differential equation of the first order.

Find the most general form of the solution common to the equations

$$F_1 \equiv x_1 p_1 + x_2 p_2 + x_3 p_3 + x_4 p_4 = 0,$$

$$F_2 \equiv x_2 p_1 - x_1 p_2 - x_4 p_3 + x_3 p_4 = 0.$$

III. Explain the notion of characteristic elements of a general partial differential equation of the first order, and obtain the differential equations of the characteristics.

Solve by the method of characteristics the differential equation $p^2 + q^2 = 1$.

IV. Explain Rayleigh's principle as applied to vibrational problems illustrating it by considering the vibration of a massless string with beads. Verify the solution by comparing it with that for a continuous string obtained by using Fourier Series.

V. State Fourier's Integral theorem. Explain Cauchy's method of using this theorem for obtaining the solutions of linear partial differential equations with constant coefficients, in the form of an infinite integral.

Apply the method to solve the equation of heat conduction

$$\frac{\partial u}{\partial t} = a^2 \nabla^2 u$$

with the boundary condition $u = F(x, y, z)$ for $t = 0$

VI. Define Green's function G corresponding to a point of discontinuity $Q(\xi, \eta, \zeta)$ in a three-dimensional region R bounded by a closed surface S, and establish the symmetry property of the function.

Use it to obtain the eigen-functions of

$$\nabla^2 u + \lambda u = 0$$

and prove the bilinear formula

$$G_{PQ} = \sum_r \frac{u_r(P)\, u_r(Q)}{\lambda_r}.$$

For the more general equation

$$\nabla^2 u + \lambda u = -f,$$

obtain Schmidt's solution.

VII. Show how to reduce the equation

$$L(u) = A\frac{\partial^2 u}{\partial x^2} + 2B\frac{\partial^2 u}{\partial x \partial y} + C\frac{\partial^2 u}{\partial y^2} + D\frac{\partial u}{\partial x} + E\frac{\partial u}{\partial y} + Fu = 0$$

to the three standard forms.

Define the adjoint differential form $M(v)$, and show that by suitable definitions of P and Q, we can write

$$v\,L(u) - u\,M(v) = \frac{\partial P}{\partial x} + \frac{\partial Q}{\partial y}.$$

Deduce Green's theorem, and deduce as a particular case the Green's theorem of potential theory.

If $G(x, y; \xi, \eta)$ be a Green's function of the elliptic equation

$$L(u) = \nabla^2 u + a\frac{\partial u}{\partial x} + b\frac{\partial u}{\partial y} + cu = 0$$

and $H(x, y, \xi, \eta)$ of the adjoint equation, prove that

$$H(\xi, \eta, \xi', \eta') = G(\xi', \eta', \xi, \eta)$$

VIII. Obtain Laplace's differential equation in spherical polar co-ordinates and show that its general solution can be written in the form

$$Ar^n Y_n + BY_n/r^{n+1}$$

where Y_n satisfies the equation

$$\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\left(\sin\theta\frac{\partial Y_n}{\partial\theta}\right) + \frac{1}{\sin^2\theta}\frac{\partial^2 Y_n}{\partial\phi^2} + n(n+1)Y_n = 0$$

Consider the particular case where Y_n is independent of ϕ and denoting the polynomial solution of the differential equation in this case by $P_n(\mu)$, where $\mu = \cos\theta$, prove the integral relations

$$\int_{-1}^{+1} P_m(\mu)\, P_n(\mu)\, d\mu = 0 \ (m \neq n)$$

$$\int_{-1}^{+1} P_m^2(\mu)\, d\mu = \frac{2}{2m+1}.$$

Give a simple example illustrating the use of these polynomials in potential theory.

IX. If $\lambda_1, \lambda_2, \cdots$ be the eigen-values, and $\phi_1, \phi_2, \cdots$ be the corresponding eigen-functions of the linear integral equation

$$\phi(x) = \lambda\int_a^b K(x, \xi)\,\phi(\xi)\, d\xi$$

with symmetric kernel, prove that

(i) Eigen-functions corresponding to different eigen-values are orthogonal to each other,

(ii) Eigen-values are real for real kernels,

(iii) A continuous function $h(t)$ orthogonal to all the eigen-functions $\phi_n(t)$ is also orthogonal to the nucleus $K(x, t)$

X. Investigate the first variation of the integral

$$J = \iint_G F(x, y, u, u_x, u_y)\, dxdy$$

where u has continuous second derivatives in G, and assumes prescribed values on the boundary of G, and deduce Euler's partial differential equation as a necessary condition for an extremum of J.

Considering the particular variation problem

$$J = \iint_G (\phi_x^2 + \phi_y^2)\, dxdy$$

with the subsidiary condition

$\iint \rho\phi^2 dxdy = 1$, and $\phi = 0$ on the boundary, show that a solution of this problem is an eigen-function of the partial differential equation

$$\nabla^2 u + \lambda\rho u = 0$$

with $u = 0$ on the boundary.

ANNAMALAI UNIVERSITY

B Sc. (Hons) Degree Examination—Final, 1938

BRANCH II

PHYSICS

PROPERTIES OF MATTER

MONDAY, 21ST MARCH] [10 A M. TO 1 P M.

[*Not more than* SIX *questions are to be attempted. All questions carry equal marks.*]

I Deduce an expression for the period of a compound pendulum

Investigate the effect of a finite amplitude on the period

A thin rod OA 2 ft long is suspended at O and is fixed at A to the rim of a circular disc of diameter 1 foot so that OA produced passes through its centre Neglecting the mass of the rod find the period of small oscillations in the plane of the disc

II Define bulk modulus

If δv is the change in internal volume v of a cylinder under a tension P, show that $\delta v/v = P/3k$ where k is the bulk modulus and deduce an expression for k in terms of the elastic constants q and σ

Describe a direct method of measuring k

III. A rod of length l and weight w per unit length is supported at its ends and loaded by a weight W at the centre Derive an expression for the depression produced at the centre

Describe how Young's modulus may be determined by measuring the angular deflection at the end of a beam loaded at the centre.

[T O

IV Explain the two ways of regarding a shear and show that the circular measure of the angle of shear is twice its fractional elongation

Give the theory of torsion of a right cylinder.

A flat spiral spring is extended by a weight W. Describe the nature of the deformation produced and find an expression for the energy stored in the spring

V Explain, proving the necessary formulae, the method of determining surface tension by means of ripples

If the surface tension of water is 75 C G S units, show that no waves can travel over the surface of water with a smaller velocity than 23 cms per sec

VI Write a short note on the theory of dimensions

A sphere of radius r moves through a liquid with a velocity v Deduce by the method of dimensions an expression for the force which opposes the motion of the body Assuming the velocity of the body to be small, show that the force $f = kVrn$ where k is a constant and n is the coefficient of viscosity of the liquid

VII Describe with relevant theory a method of determining the coefficient of viscosity of a gas

VIII Deduce an expression for the potential due to a thin shell of gravitating matter at a point (*a*) outside, (*b*) inside the shell

Show that the potential due to a solid sphere of mass m and radius a at a point inside the shell and distant r from the centre of the sphere =

$$-Gm\left(\frac{3a^2 - r^2}{2a^3}\right)$$

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH II

PHYSICS

HEAT AND SOUND

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

(*Not more than* FOUR *questions from Group A and* TWO *questions from Group B are to be attempted. All questions carry equal marks.*)

GROUP A

I. Describe and explain some modern methods of producing and measuring low temperatures.

II. Describe how the variation of C_p of gases with temperature and pressure has been studied. State the results obtained.

III. Explain how the thermal conductivity of metals at liquid air temperatures has been determined by direct methods.

State the law of Weidemann and Franz and show how far it agrees with experiment.

IV. Derive the equation $C_p - C_v = T \left(\frac{dv}{dT}\right)_p \left(\frac{dp}{dT}\right)_v$

Thence deduce an expression for the difference between the specific heats of a solid at constant pressure and at constant volume.

V. Deduce an expression for the specific heat of a saturated vapour in terms of the specific heat of the liquid state and the latent heat of vaporisation at the temperature T.

[T. O.

Show that the specific heat of a saturated vapour may be negative.

VI. Explain Prevost's theory of exchanges.

How have the characteristics of black body radiation been investigated experimentally? State the results obtained.

GROUP B

VII. Investigate the motion of a damped oscillating system under the action of an external periodic force.

Hence explain the phenomenon of resonance.

VIII. Investigate the motion of a sonometer wire plucked at a distance of one third of its length from one end.

Describe an experimental method of studying the motion of a point on the vibrating string.

IX. Write short notes on any three of the following :—

(*a*) Singing flames.
(*b*) Decibel.
(*c*) Peizo-electric oscillator.
(*d*) Valve maintained tuning fork.

ANNAMALAI UNIVERSITY

B.Sc. (Hons) Degree Examination—Final, 1938

BRANCH II

PHYSICS

SOUND AND LIGHT

WEDNESDAY, 23RD MARCH] [10 AM TO 1 PM

[*Not more than* TWO *questions in Group* A *and* FOUR *from Group* B *are to be attempted*]

GROUP A

I Give the theory of combination tones and describe how they can be produced

II. Write an essay on the acoustics of buildings

III Write short notes on any three of the following —

(*a*) Acoustic impedance (*b*) Supersonics (*c*) Vowel sounds (*d*) Phonodeik (*e*) Consonance and dissonance

GROUP B

IV Describe and account for the diffraction pattern due to a narrow rectangular aperture

V Describe a method of producing elliptically polarised light and give the theory of the method

Explain how Babinet's compensator is used in the study of elliptically polarised light.

VI Give the theory of internal and external conical refraction and describe how these phenomena can be observed

VII Define the principal planes and the nodel points of a thick lens and derive formulae for their positions

VIII. Define group velocity and find an expression for it. Discuss the importance of group velocity in some optical phenomena.

IX Give the theory of the Lummer Gehrcke plate. Show how it is used to determine the structure of a spectral line.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH II

MAGNETISM AND ELECTRICITY

THURSDAY, 24TH MARCH] [10 A.M. TO 1 P.M

[*Not more than* SIX *questions are to be attempted. All questions carry equal marks.*]

I Find the law of refraction of the magnetic lines of force at a surface at which the permeability of the medium changes.

A sphere of permeability μ_2 is placed in a medium of permeability μ_1 where there is originally a uniform magnetic field H Show that the resultant field H_2 inside the sphere is given by

$$H_2 = \frac{3\mu_1}{\mu_2 + 2\mu_1} . H$$

Draw figures roughly showing the distribution of the lines of force inside and outside the sphere when (*a*) $\mu_2 > \mu_1$ and (*b*) $\mu_2 < \mu_1$.

II. Describe how you would determine experimentally the diamagnetic susceptibility of a liquid giving the theory of the method.

Write a note on the variation of the diamagnetic susceptibility with temperature of water.

III. Find the capacity per cm. of a long cylindrical condenser consisting of two coaxial cylindrical conductors, the outer of which is earthed.

How will the capacity be altered if the inner conductor is displaced laterally from its coaxial position?

A parallel plate condenser of length l, breadth b and plate separation distance t has the space between the plates filled by a slab of dielectric of specific inductive capacity K. The slab is withdrawn in the direction of its length until only a length x remains between the plates If the charge on the condenser is E, calculate the force tending to restore the plate to its original position neglecting the edge effects

IV Describe some form of quadrant electrometer. Explain how it is used to measure small potential differences.

If one pair of quadrants of a quadrant electrometer be earthed and if a constant charge is given to the other pair, find the potential of the needle for which the deflection is maximum.

V Find the current through the galvanometer in a Wheatstone's net in terms of the resistances of the six arms and the electromotive force of the battery. If the resistance of the battery, but not that of the galvanometer, be negligible, find the advantageous way of connecting them if the resistances of the other four arms are given.

Describe how two very low resistances can be compared with a Kelvin bridge

VI. Describe an induction coil, explaining fully the function of the condenser.

VII. Deduce the equation for the discharge of a condenser through a circuit containing a resistance and an inductance in series. When is this discharge oscillatory?

A leaky condenser of capacity C and conductivity K is connected in series with a resistance R and an impressed electromotive force $E_0 \sin \omega t$. Find the impedance of the circuit.

VIII. What is meant by Maxwell's displacement current? Write down the fundamental equations of the electromagnetic field and derive from them the velocity of propagation of plane electromagnetic waves in a medium of specific inductive capacity k and permeability μ

IX. Write notes on any three of the following —

(*a*) Faraday effect.

(*b*) Characteristic curve of a screen grid valve.

(*c*) Electronic theory of metallic conduction.

(*d*) Hall effect.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination, 1938

BRANCH II

PHYSICS

SPECIAL SUBJECT · X-RAYS

FRIDAY, 25TH MARCH] [10 A.M. TO 1 P.M.

[*Not more than* FIVE *questions are to be attempted. All questions carry equal marks.*]

I. Give a general account of (*a*) the various types of X-ray tubes in practice and their characteristics, and (*b*) the recent methods of generating the high tensions suitable for exciting X-ray tubes

II Describe the theory and practice of Bragg's revolving crystal method for the measurement of X-ray wavelengths.

III. Give Thomson's theory of the scattering of X-rays. Discuss how far it agrees with experimental results

IV. Describe the magnetic spectrum method of investigating the velocities of photoelectrons.

State and explain Einstein's photoelectric equation. Discuss its applicability in the X-ray region

V. Write an essay on the Auger effect.

VI. What are X-ray absorption edges? How are they studied by experiment?

Write a note on the fine structure of absorption edges.

VII. Explain with the aid of an energy level diagram the emission of the K series of an element.

What interpretations have been suggested for X-ray nondiagram lines?

VIII. Write notes on —

(*a*) The structure factor.
(*b*) X-ray diffraction fringes.
(*c*) Polarisation of X-rays.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination, 1938

BRANCH II

PHYSICS

MODERN PHYSICS

SATURDAY, 26TH MARCH] [10 A.M. TO 1 P.M.

[*Not more than* FIVE [illegible] *are to be attempted. All questions carry equal marks*]

I. How did Rutherford explain the scattering of α-particles by matter?

Describe the theoretical and experimental investigations which led him to propose the nuclear theory of the atom.

II. Give an account of the different methods of determining the spin moment of atomic nuclei.

Discuss briefly the recent attempts to calculate this spin moment from theoretical considerations.

III. Describe the important features of any typical band system.

Show generally how the various characteristics of its structure are explained on the quantum theory.

IV. Give an account of Langevin's theory of diamagnetism and explain its limitations.

Write a note on the magnetic susceptibility of inert gases.

[T. O.

V. Obtain an expression for the thermionic current from a heated metal filament. How has it been verified?

Discuss the effects of space charge on the thermionic current.

VI. Bring out clearly De Broglie's conception of material waves and apply it to derive Schrodinger's wave equation.

Describe Rupp's experiments on the diffraction of electrons.

VII. Write an essay on *either* "Heavy hydrogen" *or* "Recent work on cosmic radiation."

VIII. Write notes on any *three* of the following.—

(*a*) Pauli's exclusion principle.

(*b*) Sensitised fluorescence.

(*c*) Artificial radioactivity.

(*d*) Paschen-Back effect.

(*e*) Rutherford's theory of successive transformations.

(*f*) Raman effect of water.

(*g*) Packing effect.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH III

CHEMISTRY

GENERAL AND HISTORICAL CHEMISTRY

MONDAY, 21ST MARCH] [10 A.M. TO 1 P.M.

[*Answer any* FIVE *questions, all questions carry equal marks*]

I. Give a brief account of the scientific work of (*a*) W. H. Perkin, jun., *or* Baeyer, and (*b*) T. W. Richards *or* Faraday.

II. What is meant by the *atomic number* of an element? Show clearly how it has rendered the Periodic Classification more consistent and precise.

III. Discuss the trend of organic chemistry during recent years.

IV. Give an account of the industrial developments that have taken place due to the introduction of catalysts and promoters in chemical reactions.

V. Write an essay on "Carbon dioxide and its applications," bringing out clearly its importance in daily life.

VI. Discuss the value of optical methods for the elucidation of structure of compounds.

VII. "The industrial development of a country depends upon its coal-resources." Critically examine this statement.

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination—Final, 1938

BRANCH III

CHEMISTRY

INORGANIC CHEMISTRY

WEDNESDAY, 23RD MARCH] [10 A.M. TO 1 P.M.

[*All questions carry equal marks. Answer* THREE *questions from* (*A*) *and* TWO *questions from* (*B*)]

A

I. Write a brief account of the chemistry of *Molybdenum* or *Tungsten.*

II. Substantiate the statement "The halogen family is a group of elements with remarkably graded properties." Give a brief comparative study of the properties of Iodine At. No. 53 and the expected properties of At. No. 85, which differs from the former by 32 units of atomic number.

III. Compare and contrast the properties of magnesium and its compounds with those of calcium and zinc. Comment briefly on points of interest connected with the metallurgy of the three elements.

IV. What are the sources of potassium? Give a short comparative account of the alkali metals. Which method do you consider to be the best for obtaining a pure sample of a Rubidium salt?

B

I. Discuss with evidence, Fajan's theory of ionisation and co-valency formation.

[T. O.

II. How do modern views support the fact that hafnium does not belong to the rare-earths?

III. How is lead prepared? How would you purify a specimen of lead containing silver? How do the oxides of lead exemplify the rule "where an element forms a number of oxides, the lower oxides are more basic than the higher oxides and *vice versa.*"

IV. What are the difficulties that are likely to arise in qualitative analysis by the presence of the following and how can they be overcome?—(*a*) presence of mercury in lead, (*b*) presence of beryllium in aluminium, (*c*) presence of arsenate in arsenite, and (*d*) presence of sulphide in sulphite?

ANNAMALAI UNIVERSITY

B. Sc. (Hons.) Degree Examination, 1938

BRANCH III

PHYSICAL CHEMISTRY

TUESDAY, 22ND MARCH] [10 A.M. TO 1 P.M.

[*Answer* FIVE *questions only; all questions carry equal marks.*]

I. Derive an expression connecting the molecular weight of a gas with the pressure and temperature at which it is maintained State how the methods of molecular weight determinations based on this expression are subject to limitations.

II. Explain what is meant by (*a*) Solution pressure, and (*b*) Affinity.

If there are *E* volts between two electrodes on open circuit, *nF* Coulombs of current are taken out of the cell, and one ion reduced from osmotic pressure P_1 to P_2, prove that

$$nEF = RT \log P_1/P_2$$

Two silver electrodes are immersed in normal and centinormal silver nitrate solutions. Assuming that there is no diffusion E. M. F. at the liquid junctions and that the activity coefficients at both concentrations is unity, calculate the E. M. F. of the cell at 20°C.

III. Discuss the physico-chemical principles involved in any one of the following industrial processes.

(*a*) Fixation of atmospheric nitrogen by Birkeland and *Eydes*' process.

[T. O.

(*b*) Desilverisation of lead by *Pattinson's* process.

and (*c*) Manufacture of Sodium Nitrate from *Caliche.*

IV. "The electronic theory has provided a very helpful interpretation of *Werner's* theory of valency." Discuss this statement.

V. Discuss the role of indicators in analytical practice, mentioning the more recent work on adsorption indicators.

VI. Give a brief account of the works of *Freundlich, Langmuir, Taylor* and *Volmer* on the nature of adsorption at catalytic surfaces.

What mechanism would you suggest for the reaction $2\,SO_2 + O_2 \rightarrow 2\,SO_3$ on platinum if

$$\frac{dx}{dt} = K\,[O_2]\big/(SO_3)^{\frac{1}{2}}.$$

VII. Write short notes on any *three* of the following. (*a*) heavy hydrogen; (*b*) activity coefficient; (*c*) azeotropes; and (*d*) energy of activation

ANNAMALAI UNIVERSITY

B. Sc. (Hons) Examination—Final, 1938

BRANCH III

ORGANIC CHEMISTRY. I PAPER

THURSDAY, 24TH MARCH] [10 A M. TO 1 P M.

[*Answer any* FIVE *questions, all questions carry equal marks*]

I. Describe with all essential details (*a*) the preparation of ethyl acetoacetate, *and* (*b*) the estimation of nitrogen by Kjeldahl's method.

II. Develop from the known experimental evidence the glucosidic ring structure of monosaccharides.

III. Give an account of the general methods of preparation of polypeptides and indicate their biological importance

IV. Write an essay on "Geometrical Isomerism," not taking into account the isomerism of the oximes

V. Describe with appropriate examples, the reactions named after Knoevenagel, Guareschi, Dieckmann and Diels-Alder.

VI. Give an account of the optically active nitrogen compounds.

VII. Write short notes on *three* of the following :- (*a*) Ozonolysis; (*b*) Roozeboom's methods to distinguish between racemic compounds and dl-conglomerates, (*c*) Conjugated system of double bands; (*d*) Ketones; and (*e*) Hantzsch-Werner hypothesis.

ANNAMALAI UNIVERSITY

B. Sc (Hons.) Degree Examination – Final, 1938

BRANCH III

CHEMISTRY

ORGANIC CHEMISTRY II PAPER

FRIDAY, 25TH MARCH] [10 A M TO 1 P M.

[*Answer* FIVE *questions only All questions carry equal marks*]

I A neutral compound of the formula $C_{16}H_{12}O_3$ was found to contain a methoxy-group. On treatment with alcoholic potash it gave an acid, $C_7H_6O_2$ and a phenolic ketone, $C_9H_{10}O_3$

The acid $C_7H_6O_2$ on decarboxylation gave benzene The phenolic ketone was found to contain one methoxy-group When treated with dimethyl sulphate and alkali, it was converted into a neutral compound of the formula $C_{10}H_{12}O_3$. This on oxidation gave o-methoxybenzoic acid.

Show clearly how the formula of the substance, $C_{16}H_{12}O_3$ can be established from the above results.

II Describe the conditions under which the following reactions are carried out and indicate briefly the mechanism of the reactions

i. Synthesis of phenolic ketones, ii. Beckmann transformation, iii Skraup's quinoline synthesis, and iv Fischer's Indole synthesis

III. Write notes on (*a*) the stereochemistry of diphenyl derivatives, and (*b*) the triphenyl methyl radicle.

[T. O.

IV. Give a brief account of the degradation products obtained from uric acid Describe two methods by means of which it has been synthesised

V Write an essay on any *one* group of colouring matters of flowers

VI. Mention the methods employed for the qualitative and quantitative determination of the more important functional groupings in alkaloids Describe briefly how the carbon skeleton of Ecgonine has been established

VII. Discuss the theory "Isoprene forms the fundamental unit from which all the terpene compounds are derived"